SWOTOURS: A MODIFICATION OF AN INTERACTIVE COMPUTER MODEL TO ANALYZE THE MANPOWER REQUIREMENTS OF THE OPERATIONAL TOURS OF U. S. NAVY SURFACE WARFARE OFFICERS

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THESIS

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by

William Daniel Ferree
June 1981

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SWOTOURS: A Modification of an Interactive Computer Model to Analyze the Manpower Requirements of the Operational Tours of U. S. Navy Surface Warfare Officers

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Submitted in partial fulfillment of the
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from the

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June 1981

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This thesis presents a modification of an interactive computer model designed to examine the Surface Warfare Community. The model called SWOTOURS is designed to provide information that allows manpower managers increased analytical power. A tour structure is defined, and specific billet requirements for each tour are assumed. Billet requirements and officer supplies are compared to calculate tour opportunities or shortfalls. Officer inventory computation was specifically changed so that the model now ages its own inventories. Also, a new computational method to compute tour opportunities was introduced so that the model's calculations would simulate those of the Navy's manpower managers who would make use of the model. Model capability is demonstrated by alterations made to current data to show their effects on operational tour opportunity. A major portion of the changes deal with the officer manpower problems implied by the proposed policy of increasing fleet size towards 600 deployable ships by the end of the decade. The model shows the impact of such a ship growth on opportunity rates. Other changes are demonstrated to show how some manpower policy variables can be changed to alleviate the effect of growth in ship inventory.

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PREFACE

This thesis was completed as part of the Research in Officer Manpower and Personnel Planning sponsored by the Principal Deputy Assistant Secretary of the Navy (Manpower and Reserve Affairs) and the Deputy of Naval Operations (Manpower, Personnel, and Training, OP-01).

The model is accessible to manpower managers in OP-01 using the APL*PLUS system of the Scientific Time Sharing Corporation. Potential users may readily familiarize themselves with the model by referring to Chapter IV and V, and accompanying appendices of this thesis.

I. INTRODUCTION

> "Manpower management includes planning, statistical forecasting, balancing, and approving manpower requirements; that is, the specific numbers and kinds of military billets or civilian positions required by each activity (sea or shore)." [Ref. 1]

Manpower, therefore, deals with the aggregate of people and with the general characteristics of groups of individuals. The Navy has been instrumental in much of the development of current manpower management techniques.

All organizations are interested in optimally matching personnel to job requirements. To accomplish this, the first step is to develop accurate manpower requirements and job descriptions. In the Navy, ship's manpower requirements are determined by the Ship Manpower Documentation (SMD) program. By this method numbers of enlisted personnel are derived by matching the missions required of the ship and the degree of readiness under which the crew is expected to operate. Officer requirements are less formally defined and in general rely on historical precedence.

Military manpower managers are continually faced with the problem of managing a smaller than desired supply of people and matching that shortage with an inventory of jobs that fluctuates with changes in American defense policies. Alden points out [Ref. 2]:

"The Navy policy maker is faced with a great deal of uncertainty when he attempts to formulate manpower plans for the Navy's future officer force structure."

Even after carefully defining requirements, the problem of effectively managing limited manpower resources still remains. In the last 15 years, manpower managers have received the consulting assistance of mathematicians and statisticians in the design of manpower models. It is the purpose of these manpower models to be tools to aid the decision maker in his managerial tasks. These models allow complex policy changes to be simulated on the computer. This is a great advancement over many prevailing procedures that are limited to simple hand calculations.

In the last two years at the Naval Postgraduate School in Monterey, CA, several interactive manpower models have been designed to enhance Navy decision makers ability to analyze his manpower problems. Teply [Ref. 3] developed a model for the Navy's Submarine Officer Corp, Morris [Ref. 4] did the analogous task for Maritime Patrol Officers, and Scholes [Ref. 5] did the same for all Aviation Warfare Specialists. Working as advisor for these projects, Milch [Ref. 6] designed the basic model to handle Surface Warfare Officers (SWO).

This thesis continues research in this area by taking the present Surface Warfare Officer Model (SWOTOURS) of Milch [Ref. 6] and modifying it to meet the perceived needs of the Navy's manpower managers. This coordination process of matching user needs with modeler skills has resulted in

changes to the original model that will hopefully increase both its use and usefulness as a manpower tool. The new features of the model follow the procedures now used by various managers in the Office of the Deputy Chief of Naval Operations, Military Personnel and Training Division (OP-13).

As a preview of the resultant model, it can be said that SWOTOURS offers a medium through which many of the supply/requirements manpower questions of the SWO community can be simulated. The model determines sea requirements for officers by first classifying each SWO job on any ship into one of 15 categories (tours). The number of such requirements for each tour and ship class, together with the projected numbers of ships, combine to form the total billet requirements by tours over the appropriate years. On the supply side, an inventory of current officers by grade and years of commissioned service (YCS) is aged and promoted based upon current statistical information. Further adjustments to the supply are made by including variations in tour length and specific rank requirements to serve in a specific tour. Finally, selection points for each tour are introduced to calculate expected average opportunities for each tour.

The chapter that follows examines the current SWO manpower system and an individual's career development path. Next, a description of the model and its detailed operational instructions will be presented. Then, specific applications

and alterations will be demonstrated to show the model's flexibility and usefulness. Lastly, some conclusions and specific recommendations are discussed.

II. THE SURFACE WARFARE OFFICER MANPOWER PLANNING SYSTEM

The Surface Warfare Officer (SWO) community is one of the three Unrestricted Line (URL) communities that provide an officer with the opportunity to be assigned ultimately as a commanding officer of a major command. The surface warfare community is composed of officers who man surface ships and aspire to serve as their commanding officers. The officer's skills of both warfare speciality knowledge and managerial expertise increase with each progressive at-sea assignment. To be successful as a SWO, an officer is required to learn the fundamentals of engineering, weapon systems and operational tactics while serving on a variety of ship classes. The development of such a well-rounded officer requires a carefully planned career path which permits the training of the officer and at the same time increases his level of responsibility with each successive assignment.

Figure 1 [Ref. 7] shows the typical career path of the successful SWO. Tours are shown along a vertically displayed time line of years of commissioned service (YCS). Campbell [Ref. 8] conducted a study in 1980, and confirmed the absence of any absolute path to selection or nonselection to commander command. He found that in a successful career path operational tours (sea duty) weighed most heavily toward advancement. It is this assumption of preponderance of operational tour

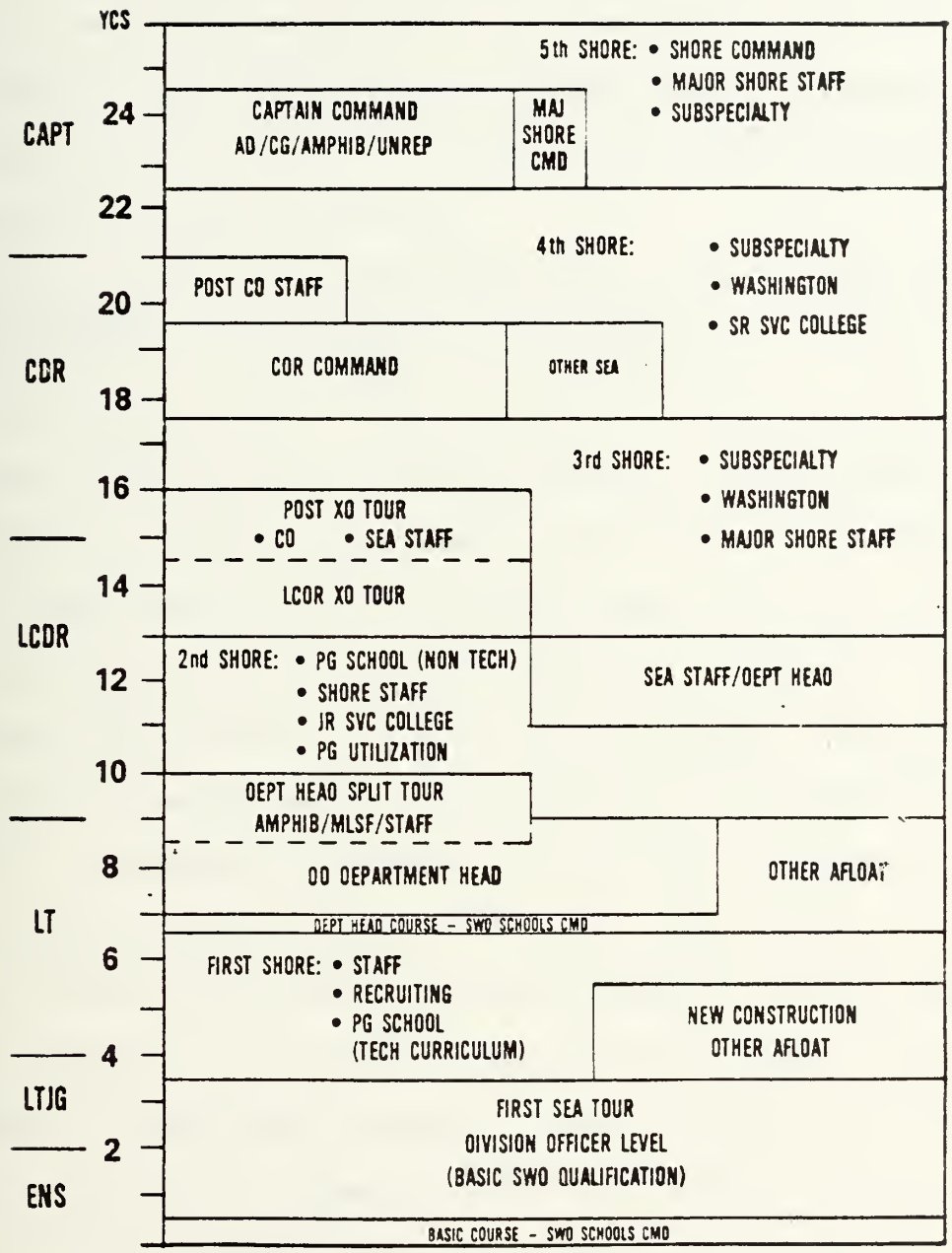

Figure 1. Surface Warfare Officer Professional Development Path.

importance that allows the SWO modeler to concentrate the modeling effort on the sea duty area. Shore billets are usually performed to develop a subspeciality. The Navy publication, Unrestricted Line Officer Career Guidebook (NAVPERS 15197A) [Ref. 7], contains this general guidance to the aspiring URL officer:

> "It is important to understand that, for the URL officer development in a subspeciality is not a generally available alternative to operational development."

The Chief of Naval Operations (CNO) controls the overall manpower planning for SWOs with specific implementation tasks assigned to various subordinates. The three organizations that closely monitor the manpower issues of the SWO community are the Deputy Chief of Naval Operations (DCNO) for Manpower, Personnel and Training (OP-01), the Commander, Naval Military Personnel Command (NMPC), and the DCNO for Surface Warfare (OP-03). SWOTOURS as modified by this thesis work is designed to provide manpower managers of these organizations a managerial tool to aid both the efficiency and effectiveness of their efforts. As has been previously discussed, the great variety of shore tours filled by SWOs and the fact that sea duty tours are the primary force behind the successful career has lead the SWOTOURS modeling effort to be limited exclusively to sea tours.

The following chapter develops a model which should allow manpower specialists to develop and test numerous complex alternative hypotheses concerning distribution, assignment and selection policies for SWOs.

III. SWOTOURS MODEL DESCRIPTION

A. THE ORIGINAL SWOTOURS

1. General

Milch [Ref. 6] designed the original model computing seatour opportunities for SWOs. This model is described in detail in the above reference. Additional computations required of the model due to this thesis work are contained in a supplement to his paper. A narrative description of the original model will be presented here since it provided the foundation of this thesis work.

The intent of the model is to provide the SWO manager with an interactive tool that is easy to use and accurate in its results. The model attempts to simulate the flow of SWOs by following the career path shown in Figure 1. Careful and continuous liaison was carried on with officers of OP-13 to divide SWO seatours into 15 general sea tours. Figure 2 contains normal tour names and alphanumeric codes for the operational tours shown in Figure 1. A general description of each of these tours is contained in Appendix A. It may be pointed out in advance that the beginning year and length of the tours displayed in Figure 2 may be changed by the user as desired when using the interactive model.

The model is user oriented to allow substantial freedom in examining the impact on the resultant outputs of

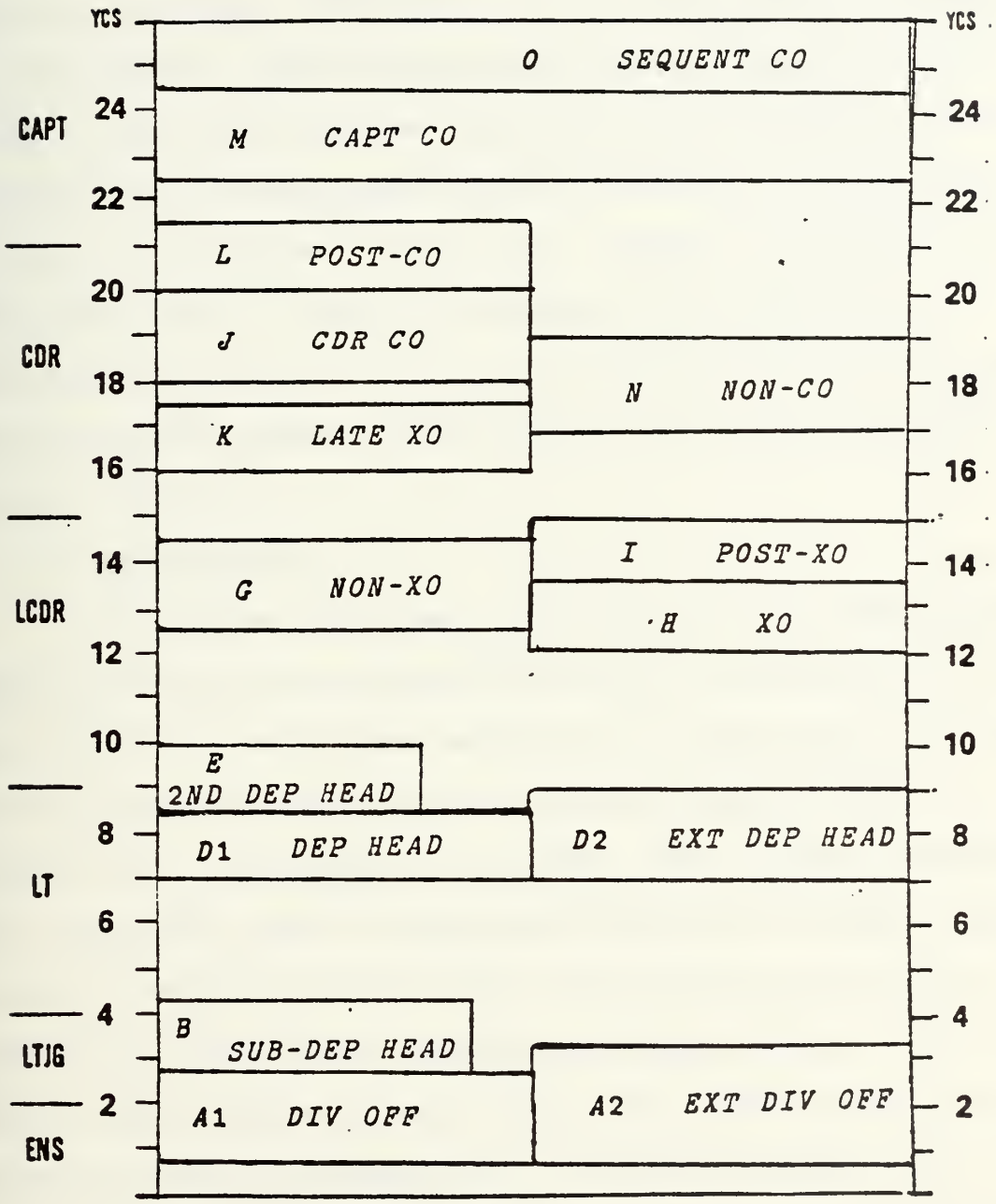

Figure 2. Surface Warfare Officer Operational Development Path.

changing any one of the input variables. For this reason, care must be taken by the user to make sure that changes made are sensible. Secondly, the user when making changes will be asked if these changes are to be permanent or temporary. Thus, the user has the option when examining the results of an informational query of making no alterations to the data contained in the file. Finally, throughout the model YCS refer to the year of service the officer is in rather than the years of service completed. Thus, an ensign with six months commissioned service will be classified as having a YCS of 1.

2. Requirements

To compute requirements for SWOs, it is necessary to identify those ships and sea duty staffs on which SWOs serve. After selecting only these ships we are still left with over 250 different ships and over 75 staffs requiring SWOs of varying ranks and numbers. To reduce this number to managable size, the model uses 55 different ship/staff classes. Appendix B gives a complete list of these ship/staff classes and an example of a forecasted composition across fiscal years (FY). Numbers used throughout this thesis are those compiled by the author and are not classified. It is anticipated that the matrix shown in Appendix B, when used by the actual manpower managers, would reflect the same inventory as the Navy Department Five Year Plan (NDFYP) or proposed changes to it. The ship types "Dummy I" and "Dummy II" are included in the

list to allow additions of new classes of ships without having to remove a present class.

Appendix C shows the same ship/staff class list now displayed to show numbers of billets for each tour type required on every ship/staff class. Again the user can modify this matrix and observe the changes in results derived from the changed requirements in the number of officers in a tour position for a certain ship/staff class.

The number of ships forecast (Appendix B) and the number of surface warfare sea billets by shiptype (Appendix C) together permit the computations needed by the model to predict billet requirements in future fiscal years (FYs).

Taking the total billet requirements for any given tour and dividing it by the length of the tour (e.g. 1.5 years) gives the turnover rate in that tour per year. This billet rate describes how many billets will change hands each year by tour. These figures are important to the manpower manager, since he must compare these vacancy requirements with supply availabilities.

3. Supply

The supply of SWOs available for any of the billet vacancies is a composite of many qualifications. Appendix D displays an example of the SWO inventory over five FYs. The officer inventory is derived from outputs of the Projected Officer Personnel Inventory (POPI) model operated by OP-01. POPI ages its own inventory based on numerous input data

such as promotion and continuation rates. The inventory in the SWOTOURS model of any given year can be altered interactively, although changes are not automatically aged across later years. Thus the user must either make the required aging changes to subsequent inventories or as a minimum realize that the model reverts back to the POPI inventory in unchanged years.

The second criterion to be included in figuring available inventory is to look at where each tour fits into the overall SWO career path. The two parameters involved are tour start and tour length. Appendix E takes the information shown in Figure 2 and displays it as the user would see it while working with the model. Changes in the length or placement of a tour may be examined to preview probable results from these kinds of policy changes.

The third matrix to be considered is that of the tour-grade match. Each of the tours is available only to certain grades of officers. Thus, although the tour position matrix would allow anyone with 18 YCS to be eligible for the commander command tour, when the tour-grade match matrix (Appendix F) is added all officers are eliminated except those of the rank of commander. The model accomplishes this with the aid of the tour-grade match matrix which allows only the appropriate grade columns of the officer inventory to be considered. In the same manner, the tour position matrix causes the model to disregard all of the officer

inventory rows except those with the appropriate YCS for the tour. Then a final computation is performed by the model as it checks to see if any other tour is drawing on this same pool of available officers. If it is, the model apportions the officers based on the billet rates of the competing tours. The computed inventory is considered to be the total available supply for that specific tour.

4. Results

The model is designed to provide the manpower manager with four major results. First, he is presented with the number of sea duty billets required to be filled by SWOs by tour and FY. A second display shows the number of SWOs qualified to serve in sea billets by tour and FY. The ratio of the above, the opportunity rate (or shortfall) of officers to billets is computed as output three. A fourth output gives the billet rate (requirements divided by tour length) for each tour and FY. Appendix G contains examples of the outputs of the model.

B. REQUIREMENTS FOR CHANGE

When the SWOTOURS model was first introduced to the Navy manpower managers it was received as a tool that could be of great benefit in examining policy variables. In practice, however, the model often required additional hand calculations by the user to derive other needed information.

Two major complaints found in questioning manpower managers who were potential users of the system were that: (1) the

model did not "age" its own officer inventory and (2) the opportunity rate computation did not match the current policy computational process used by selection boards for selecting officers for tours.

The SWOTOURS model as originally constructed was not an accession model. It could not predict the number of officers to be recruited to fill billet requirements in the future. Modifying the model by having it age its own officer inventory increases the model's versatility. The modified model takes the current FY's officer inventory from outputs of the Officer Management Simulation Model (OMSM), which keeps track of actual officer inventory. The model then ages its own inventory based on the latest promotion and continuation rates of the SWO community. Appendix H contains the model's current continuation and promotion rates. The figures will be updated as required, since currently this matrix is not managed interactively.

The Navy convenes selection boards to examine eligible officers for subsequent tours after they have been selected for the appropriate rank required by the tour, but prior to their reaching the appropriate YCS required by the model. For example, a commander command tour does not occur on the time line until the 18th YCS; however, selection to the rank of commander is typically achieved by the 16th YCS. Therefore, some officers in their 16th YCS are considered and selected for billets typically filled by commanders in their 18th YCS.

In reality, an officer is "looked at" for selection to a tour during several subsequent YCSs. For example, a commander is looked at in his 16^{th}, 17^{th}, 18^{th} and 19^{th} YCS for the commander command tour which begins in the 18^{th} YCS according to the model. A selection point matrix such as the one shown in Appendix I is introduced to deal with this situation. This matrix simulates the actions of current manpower managers by considering selection at only one YCS point for each tour.

C. THE NEW SWOTOURS

1. Model A

SWOTOURS is now available to perform computations in two forms labeled Model A and Model B. One of the initial questions asked of the user will be which of the two models is to be used. Model A is basically the original SWOTOURS model with the exception that the officer inventory system has been altered to consist of the OMSM inventory and the new aging process. Thus the outputs and computational methods of Model A are exactly the same as those described in the first section of this chapter.

2. Model B

Model B, like Model A, includes the new feature of the officer inventory aging process. In addition, the selection point matrix (Appendix I) is introduced into the computations. It replaces the tour-grade match matrix of Model A, which is now superfluous. Since the actual selection process

considers several year groups of officers over several years, the results in this model are presented as an average over several years. Appendix J displays the three outputs of Model B's computations. The selection point matrix changes the supply of officers by defining the eligible officer at the selection point. Also, the selection point matrix allows every eligible officer to be considered for every tour vs. Model A's apportionment system. Another computational difference is that the billet rate is used as the requirement figure vs. Model A's total billet figure. The new computations of Model B reflect the current Navy manpower methodology for deriving tour opportunity.

The following section is designed to familiarize the user with the interactive use of the model.

IV. MODEL OPERATION

A. AN OVERVIEW

It is the purpose of the SWOTOURS model to provide accurate and meaningful data in the most useable format. The user is allowed to make desired changes interactively at key flow points in the model. Wherever possible questions are asked requiring only a "yes" or a "no" response from the user.

After signing on at the computer terminal, the user must make his first programming decision. This is to determine how many years of data should be considered and from what starting year. For example, typing 5 SWOTOURS 81 will allow the user to work with ship and officer inventory data of five FYs starting with 1981 (i.e. 1981 thru 1985). After this, the user will be presented with the opportunity to see detailed instructions. If the user chooses, the model will print out the display in Table I. The detailed instructions are followed by the following query concerning the desired model type.

THE FOLLOWING TWO MODELS MAY BE SELECTED BY TYPING THE APPROPRIATE NUMBER:

DONE WITH BOTH MODELS:	*TYPE* 0
TO SELECT MODEL A:	*TYPE* 1
TO SELECT MODEL B:	*TYPE* 2

If the user choses not to see the detailed instructions, the same option is immediately presented. Typing 0 when this model option is presented will take the user out of the

TABLE I

SWOTOURS PROGRAM INSTRUCTIONS

DO YOU WISH TO SEE DETAILED INSTRUCTIONS? ANSWER YES OR N (NO)!
YES

MODEL A COMPUTES OPERATIONAL TOUR OPPORTUNITIES BY FISCAL YEAR AND TOUR. OPPORTUNITY RATES ARE COMPUTED BY DIVIDING TOTAL BILLET REQUIREMENTS FOR A TOUR BY NUMBER OF ELIGIBLE OFFICERS.
MODEL B COMPUTES AVERAGE OPERATIONAL TOUR OPPORTUNITIES OVER FIVE FISCAL YEARS. OPPORTUNITY RATES ARE COMPUTED BY DIVIDING AVERAGE BILLET RATE FOR A TOUR BY AVERAGE NUMBER OF OFFICERS.

THE FOLLOWING TWO MODELS ARE AVAILABLE:
MODEL A:
MODEL B:

THE FOLLOWING OPTIONS ARE AVAILABLE:
DISPLAY SOME DATA:
CHANGE SOME DATA:
DISPLAY RESULTS:

THE FOLLOWING ITEMS MAY BE DISPLAYED:
NUMBER OF SHIPS BY TYPE AND FISCAL YEAR:
TOUR STARTS AND LENGTHS IN YCS FOR EACH TOUR:
NUMBER OF BILLETS BY SHIP TYPE AND TOUR:
GRADE ASSIGNMENTS FOR EACH TOUR: (MODEL A ONLY).
SELECTION POINTS IN YCS FOR EACH TOUR AND GRADE: (MODEL B ONLY)
INVENTORY OF OFFICERS BY YCS AND GRADE FOR A SINGLE FY:
TOTAL INVENTORY OF OFFICERS BY YCS AND FISCAL YEAR:

THE FOLLOWING ITEMS MAY BE TEMPORARILY OR PERMANENTLY ALTERED:
CHANGE NUMBERS OF SHIPS BY TYPE:
CHANGE BEGINNING YEAR AND/OR LENGTH OF ANY TOUR:
CHANGE THE NUMBER OF BILLETS BY SHIP TYPE:
CHANGE THE GRADE ASSIGNMENT FOR SOME TOURS: (MODEL A ONLY)
CHANGE THE SELECTION POINT OF ANY TOUR: (MODEL B ONLY)
CHANGE ACCESSIONS OF ENSIGNS FOR SOME FISCAL YEAR:
CHANGE THE NUMBERS OF SHIPS BY FISCAL YEAR:

THE FOLLOWING RESULTS MAY BE DISPLAYED:
BILLET REQUIREMENTS FOR EACH TOUR AND FISCAL YEAR: (MODEL A ONLY)
SUPPLY OF ELIGIBLE OFFICERS FOR EACH TOUR AND FY:
SEATOUR OPPORTUNITY (SHORTFALL) FOR EACH TOUR AND FY:
BILLET RATES (REQUIREMENTS DIVIDED BY TOUR LENGTHS):

SWOTOURS model. If the user choses Model A or Model B, full access to SWOTOURS is achieved.

At this point the user is presented with the following main options:

```
THE FOLLOWING OPTIONS ARE AVAILABLE:

0. DONE WITH THIS MODEL: TYPE 0
1. DISPLAY SOME DATA:    TYPE 1
2. CHANGE SOME DATA:     TYPE 2
3. DISPLAY RESULTS:      TYPE 3

□:
```

An abbreviated version of this format is:

```
□:

OPTIONS: DONE-0 /DATA-1 /CHANGE-2 /RESULT-3
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
```

The later is presented after the initial occasion. If the user types 0, the program will return him to an abbreviated version of the model option described above.

B. DISPLAY

If the user types 1 at the main option point, the following data display options are presented to him:

MODEL A

```
THE FOLLOWING ITEMS MAY BE DISPLAYED BY TYPING THE APPROPRIATE NUMBER:

0. DONE WITH DISPLAYING DATA:                              TYPE 0
1. NUMBER OF SHIPS BY TYPE AND FISCAL YEAR:                TYPE 1
2. TOUR STARTS AND LENGTHS IN YCS FOR EACH TOUR:           TYPE 2
3. NUMBER OF BILLETS BY SHIP TYPE AND TOUR:                TYPE 3
4. GRADE ASSIGNMENT FOR EACH TOUR:                         TYPE 4
5. INVENTORY OF OFFICERS BY YCS AND GRADE FOR A SINGLE FY: TYPE 5
6. TOTAL INVENTORY OF OFFICERS BY YCS AND FISCAL YEAR:     TYPE 6

_□:
```

MODEL B

```
THE FOLLOWING ITEMS MAY BE DISPLAYED BY TYPING THE APPROPRIATE NUMBER:

0. DONE WITH DISPLAYING DATA:                                  TYPE 0
1. NUMBER OF SHIPS BY TYPE AND FISCAL YEAR:                    TYPE 1
2. TOUR STARTS AND LENGTHS IN YCS FOR EACH TOUR:               TYPE 2
3. NUMBER OF BILLETS BY SHIP TYPE AND TOUR:                    TYPE 3
4. SELECTION POINTS IN YCS FOR EACH TOUR AND GRADE:            TYPE 4
5. INVENTORY OF OFFICERS BY YCS AND GRADE FOR A SINGLE FY:     TYPE 5
6. TOTAL INVENTORY OF OFFICERS BY YCS AND FISCAL YEAR:         TYPE 6
```

If the user types 0 he will be presented again with the main options. Typing a number 1 through 6 will produce the corresponding display shown in Appendicies B through F, and I. When passing through this point on subsequent occasions a shortened version of the above text is shown.

MODEL A

```
DISPLAY OPTIONS:
DONE-0/SHIPS-1/TOURS-2/BILLETS-3/GRADES-4/INVTRY-5/TOTAL INV-6
TYPE ONE OF THE NUMBERS LISTED ABOVE!
0:
```

MODEL B

```
DISPLAY OPTIONS:
DONE-0/SHIPS-1/TOURS-2/BILLETS-3/SEL PTS-4/INVTRY-5/TOTAL INV-6
TYPE ONE OF THE NUMBERS LISTED ABOVE!
0:
```

If the user has displayed all the data he desired, typing 0 will return the user to the main options. As an example, the user upon typing the number 5 will be asked to respond to the following statement:

TYPE YEAR FOR WHICH YOU WANT INVENTORY OF OFFICERS DISPLAYED

The user is then supposed to type the FY for which the officer inventory is desired. The user will then be presented with

the display of inventory for that specific year. Table II contains an example of such an interchange. Note that at the conclusion we are presented with an opportunity to display other FY officer inventories. By replying "yes" to this query, the user will again be presented with the request for the year for which inventory is to be displayed.

C. CHANGES

Taking the second of the main options will result in the following presentation of available change options:

MODEL A

THE FOLLOWING CHANGES MAY BE MADE IN THE DATA:

0. *DONE WITH ALL CHANGES:*	*TYPE* 0
1. *CHANGE NUMBERS OF SHIPS BY TYPE:*	*TYPE* 1
2. *CHANGE THE BEGINNING YEAR AND/OR LENGTH OF ANY TOUR:*	*TYPE* 2
3. *CHANGE NUMBER OF BILLETS BY SHIP TYPE:*	*TYPE* 3
4. *CHANGE GRADE ASSIGNMENT FOR EACH TOUR:*	*TYPE* 4
5. *CHANGE THE INVENTORY OF OFFICERS FOR SOME FISCAL YEAR:*	*TYPE* 5
6. *CHANGE NUMBER OF ACCESSIONS*	*TYPE* 6
7. *CHANGE NUMBERS OF SHIPS BY FISCAL YEAR:*	*TYPE* 7

□:

MODEL B

THE FOLLOWING CHANGES MAY BE MADE IN THE DATA:

0. *DONE WITH ALL CHANGES:*	*TYPE* 0
1. *CHANGE NUMBERS OF SHIPS BY TYPE:*	*TYPE* 1
2. *CHANGE THE BEGINNING YEAR AND/OR LENGTH OF ANY TOUR:*	*TYPE* 2
3. *CHANGE NUMBER OF BILLETS BY SHIP TYPE:*	*TYPE* 3
4. *CHANGE SELECTION POINTS IN YCS FOR EACH TOUR AND GRADE:*	*TYPE* 4
5. *CHANGE THE INVENTORY OF OFFICERS FOR SOME FISCAL YEAR:*	*TYPE* 5
6. *CHANGE NUMBER OF ACCESSIONS*	*TYPE* 6
7. *CHANGE NUMBERS OF SHIPS BY FISCAL YEAR:*	*TYPE* 7

Each option basically allows changes to one of the data matrices. Typing 0 will cause the model to return to the

TABLE II

OFFICER INVENTORY DISPLAY

TYPE YEAR FOR WHICH YOU WANT INVENTORY OF OFFICERS DISPLAYED
□:
81
INVENTORY OF SURFACE WARFARE OFFICERS FOR 1981

YCS	ENS	LTJG	LT	LCDR	CDR	CAPT
1.	1319					
2.	1446					
3.		1348				
4.		953				
5.		40	915			
6.		4	599			
7.			472			
8.			306			
9.			289			
10.			52	309		
11.			25	236		
12.				244		
13.				298		
14.				229		
15.				261		
16.				61	202	
17.				46	230	
18.				58	277	
19.				68	193	
20.				127	276	
21.				31	56	110
22.					16	113
23.					18	87
24.					35	107
25.					17	118
26.					5	87
27.					-	46
28.						61
29.						57
30.						48
31.						3

DO YOU WANT INVENTORY OF OFFICERS DISPLAYED FOR ANOTHER YEAR? ANSWER YES OR N (NO)!
N

main options. Typing one of the numbers 1 through 6 will permit the user to make changes in one of the data matrices used by the model. Table III presents an example of a simple change interplay between user and model. Most of these options work by identifying the specific part of the overall matrix to be changed, reminding the user of the present data and then asking the user if he desires to change this data. After taking the new data the program queries about any additional data changes in the same matrix, and then inquires if the user wants the changes to be made permanent. (Changes in the officer supply inventories cannot be made permanent.) If so, requested alterations are made to the file and the change options are again presented to the user. Examples of several types of changes will be demonstrated in Chapter V, Model Application and Analysis.

D. RESULTS

The third of the main options is the display of results. Before results are displayed, the model performs required mathematical computations based on the current data with any user modifications. Thus, temporary changes to the data files are at this point treated as valid for computing results. As explained earlier, Model B outputs differ from those of Model A. Model B outputs are displayed as either five year moving averages or as an average of available years, if less than five.

TABLE III

SAMPLE CHANGE PROCEDURE

```
      1

TYPE NUMBER OF SHIPTYPE FOR WHICH THE NUMBERS MAY HAVE TO BE CHANGED!
   TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.

□:
      1
                        CURRENT NUMBERS

NO.  SHIP                1981  1982  1983  1984  1985  1986

 1.  AD                    4     2     1     1     0     0

DO YOU WANT TO MAKE ANY CHANGES IN THE ABOVE DATA?   ANSWER YES OR N (NO)!
YES

TO GIVE NEW NUMBERS TYPE 6 NUMBERS (SEPARATED BY BLANK SPACES)!
□:
      4 3 2 1 1 0

TYPE NUMBER OF SHIPTYPE FOR WHICH THE NUMBERS MAY HAVE TO BE CHANGED!
   TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.

□:
      0

DO YOU WANT TO MAKE THESE CHANGES PERMANENT?   ANSWER YES OR N (NO)!
N

NO ALTERATION HAS BEEN MADE IN THE FILE.

CHANGE OPTIONS:
DONE-0/SHIPS-1/TOURS-2/BILLETS-3/SEL PTS-4/INVTRY-5 /ACCESS-6/SHIPS BY FY-7
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
      0

OPTIONS: DONE-0 /DATA-1 /CHANGE-2 /RESULT-3
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
```

After choosing the result option, the user will be presented with the following options.

MODEL A

THE FOLLOWING MODEL A RESULTS MAY BE DISPLAYED BY TYPING THE APPROPRIATE NUMBER:

0. *DONE WITH DISPLAYING RESULTS*	*TYPE* 0
1. *BILLET REQUIREMENTS FOR EACH TOUR AND FISCAL YEAR*	*TYPE* 1
2. *SUPPLY OF ELIGIBLE OFFICERS FOR EACH TOUR AND FY*	*TYPE* 2
3. *SEATOUR OPPORTUNITY (SHORTFALL) FOR EACH TOUR AND FY*	*TYPE* 3
4. *BILLET RATES (REQUIREMENTS DIVIDED BY TOUR LENGTHS)*	*TYPE* 4

MODEL B

THE FOLLOWING MODEL B RESULTS MAY BE DISPLAYED BY TYPING THE APPROPRIATE NUMBER:

0. *DONE WITH DISPLAYING RESULTS*	*TYPE* 0
1. *BILLET RATES (REQUIREMENTS DIVIDED BY TOUR LENGTHS)*	*TYPE* 1
2. *SUPPLY OF ELIGIBLE OFFICERS FOR EACH TOUR AND FY*	*TYPE* 2
3. *SEATOUR OPPORTUNITY (SHORTFALL) FOR EACH TOUR AND FY*	*TYPE* 3

Typing one of the numbers 1 through 4 will cause the corresponding result display to be presented, while typing 0 will return the user to the main options. Appendix G presents typical displays of Model A, while Appendix J presents typical displays of Model B. Table IV presents a typical result option interchange. Tour opportunities are presented in percentages, and when not enough eligible officers are available, the display shows percentage of billet shortfall, which is easily identified because it is displayed in parentheses.

The following chapter is designed to introduce the user to possible applications of the model.

TABLE IV

SAMPLE RESULTS PROCEDURE

MODEL A

NUMBER OF SURFACE WARFARE OFFICERS

YEAR	*A1*	*A2*	*B*	*D1*	*D2*	*E*	*G*	*H*	*K*	*I*	*J*	*N*	*L*	*M*	*O*
1981	609	2376	527	311	90	426	267	236	327	40	429	123	230	192	104
1982	650	2506	568	364	115	332	257	208	288	36	403	127	249	172	116
1983	678	2490	684	370	120	337	246	177	278	40	444	110	197	182	93
1984	691	2468	723	410	126	402	218	193	249	32	383	104	229	184	78
1985	704	2448	731	348	117	401	208	169	275	30	360	94	217	176	94
1986	720	2421	742	414	133	426	201	149	241	32	336	98	191	162	85
1981-85	666	2458	646	361	114	379	239	197	284	35	404	112	225	182	97
1982-86	689	2467	690	381	122	380	226	180	266	34	385	107	217	176	93

MODEL A RESULT OPTIONS:
DONE-0/*REQUIREMENTS*-1/*SUPPLY*-2/*OPPORTUNITY*-3/*BILLET RATES*-4
TYPE ONE OF THE NUMBERS LISTED ABOVE!

0:

MODEL B

NUMBER OF SURFACE WARFARE OFFICERS

YEAR	*A1*	*A2*	*B*	*D1*	*D2*	*E*	*G*	*H*	*K*	*I*	*J*	*N*	*L*	*M*	*O*
1981-85	1446	1446	1478	952	952	952	263	263	188	263	188	188	188	110	110
1982-86	1446	1446	1510	984	984	984	263	263	176	263	176	176	176	106	106

MODEL B RESULT OPTIONS:
DONE-0/*REQUIREMENTS*-1/*SUPPLY*-2/*OPPORTUNITY*-3/*BILLET RATES*-4
TYPE ONE OF THE NUMBERS LISTED ABOVE!

V. MODEL APPLICATION AND ANALYSIS

A. INTRODUCTION

The main purpose behind developing SWOTOURS was to provide Navy manpower managers with an analytic tool that will help them in the management of the surface warfare community. The model's greatest usefulness is given by its computational power and speed. By being able to simulate the implementation of several different changes to current management policies at once, the complex interaction of such changes can be examined by the manager. The speed of the computer allows many complex changes to be examined within the same period of time currently spent on a single hand calculation procedure.

It is the purpose of this chapter to merely demonstrate one set of possible scenarios. These policy changes were chosen to show the model's versatility and demonstrate its ease of operation so that the user may begin to compose his own scenarios. For clarity, all examples and displays will be confined to Model B. Model A's operation is closely matched to Model B, and the user will have no problem in making the transition on a real time basis, even the first time.

B. CURRENT MANPOWER SITUATION

Appendix L contains current data and result matrices projected for FYs 81 through 86. These can be used as benchmarks against which the altered matrices may later be compared. Of main concern is the operational tour opportunities and shortfall matrix. Although these displays do not show any critical manpower deficiencies, there is a general manpower shortage in mid-grade officers. It must be remembered that SWOTOURS does not examine any shore tours. When opportunity rates for a tour become high, one may begin to question the ability of the manager to become selective in filling these vacancies. Thus, although no current shortages of officers exist as displayed, some tour opportunity rates begin to raise the question of quality control.

Since continuation rates vary for cohorts (year groups) of officers, we also find that opportunity rates for tours vary across time. For this reason, the manpower manager must closely watch trends and large fluctuations in opportunity rates. This desire for evenness of opportunity rates across time may drive policy changes in one area to counteract an uncontrollable (to the manpower manager) change in another. For example, an increase in number of ships (and therefore some billets) will cause a requirement for a greater number of officers or a lengthening of the time spent in the tour to maintain an even opportunity rate in those tours affected by the ship increase.

C. MODEL ALTERATIONS

1. Billet Requirement Alteration

Probably the most obvious change in opportunity rates is caused by changing the number or types of ships requiring surfare warfare officers. The fluctuations in ship inventory and especially in projected numbers can be quite large and very troublesome to the Navy manpower manager who is concerned about smooth opportunity rates. An example is to consider the last three administration goals of ships in 1990: Ford called for 548, Carter for 458 and Reagan for 611 ships. The question of can the Navy man such a large change in ship numbers in the next nine years (currently 477 to the proposed 611) is one of great concern. Since lateral entry of department heads, executive officers and commanding officers in large numbers is highly unlikely, we must be able to plan ahead to "grow" trained officers to fill these emerging requirements.

a. Billets on Ships

It is possible to change the composition of officers on any ship. New technology may require the addition of an extra division officer on a ship class or manpower shortages may demand reductions. Changing the billets on a certain class can be accomplished by choosing option 3 among the change options. To demonstrate this procedure, we will change the current billet structure of ship type "Dummy I". Since there is currently a great deal of support for recommissioning a battleship, we will assume that "Dummy I" stands

for "BB 62" and take on a new billet structure (currently all 0's). Appendix M, Change I, will show the process of changing billets and its effects on opportunity rates. The ship inventory of ship class "Dummy I" has one ship in each FY. The previous billet structure of all 0's kept this from having an effect on the computations. Adding the new billet structure would therefore slightly increase the officers required in the equations. The results confirm that changes appear only in the senior opportunity rates for POST-XO tour (Tour I) and CAPTAIN CO tour (Tour M). Larger changes such as adding four battleships would show up in other tour positions affected by our billet change.

b. Inventory of Ships

The current model contains an unclassified version of the Navy Department Five Year Plan based on the last Carter budget projection of ships through 1986. Some policy makers are interested in the manpower requirements of the proposed Reagan Administration plan of 600 deployable ships by 1990. Examining the increases in ships required in FY 81 through 86 as we build toward a 600 ship goal provides a good opportunity to present the flexibility of the model. It may be expected that such a large increase in ships will certainly affect opportunity rates significantly if officer inventories are continued to be projected based on current accessions, continuation and promotion rates. Appendix M, Change II demonstrates changing the numbers of ship types. The new ship

matrix is then presented with all the changes showing what are needed to build toward a 600 ship Navy by 1990. Finally, the resultant opportunity rates are shown. As expected, the increase of ships, and hence tours, has caused opportunity rates to rise. It is this kind of trend that the manpower manager must monitor. Most changes appear controllable, except for the large growth in the commander command tour (Tour J). Since there already exists a shortage of LCDR's available for this tour, the above increase in ship inventories produces an even larger shortage (when shore tours are also taken into account). Thus one of the Navy's prime tours has one of the smallest selectivity rates.

2. Officer Inventory Alterations.

At first, it may appear unlikely that the user would require changes in officer inventory projections, since that aspect of the equation seems beyond the manpower managers control. In fact, however, many questions on inventory do arise in the manager's dealings. Trying to determine the proper number of accessions to meet later year committments is probably the most eminent. The model performs its inventory aging process by use of promotion and continuation rates (see Appendix H). The model also uses the previous year's accessions as the new accession level, unless changes in accessions are introduced.

a. Accession Changes

Keeping the requirements of the proposed fleet in the model (see Appendix M, Change II), we turn to the question of what effect increased accessions would have on the opportunity rates. Appendix M, Change III shows the effect of setting future accessions at a fixed increased rate (e.g. 1400). (The model allows changes in any FY accessions, and therefore the user could vary accessions in any manner desired.) As expected, the junior tour opportunity rates decline with these higher accessions, but this is to be accepted if the Navy is to remain a closed system and grow its own inventory.

b. Lateral Entry

Changing accessions will eventually allow shortages in mid-grade officers to be corrected. However, a quicker solution to specific rank shortages could be lateral entry. This could be enacted by recalling reservists to active duty or paying a large bonus to persuade recently seperated officers to return to duty. Appendix M, Change IV shows how bringing in an additional 125 lieutenants and 75 lieutenant commanders in one year (1982) changes tour opportunities. Following inventory changes, the model repeats the aging computation and projects subsequent year inventories accordingly. As expected, opportunity rates in areas open to lieutenants and lieutenant commanders drop with such lateral entries.

3. Selection Point Alteration

Each year group of officers gets smaller in numbers as each new FY passes, due to separations and retirement. Thus, the point (i.e. YCS) at which officers are selected for a tour affects the number of officers available. Some balance must be obtained: selection for a tour should take place at an early enough time so that many officers may be considered, but also late enough so that non-selection to a certain tour will not debilitate the performance of good officers excluded because of lack of sufficient billets. Therefore, the manpower manager may want to examine the effects of changing the selection point for some tours. Although such decisions may seem restricted to high level management, the user has the freedom to try numerous alterations to the matrix. Information gained from the model simulations can then be used to brief decision makers on the impact of such policy decisions. Appendix M, Change V shows an example of changing the selection point matrix.

4. Tour Position Alteration

Probably the most common change examined by the manpower manager in attempting to even out opportunity rates across time is to change the length of time an individual spends in a tour. Lengthening a tour reduces the billet rate, and, therefore, also the opportunity rate, provided all else remains unchanged. Appendix M, Change VI increases the length of the J tour from 2.0 years to 2.5 years.

Examining the results, we see the anticipated drop in the J tour opportunity rate. Since changing tour length is fairly easy to implement, we find that it is the course usually recommended to control fluctuations in opportunity rates.

The application of SWOTOURS in this chapter has shown how the manpower manager can use the flexibility and utility of the model as a planning tool. As was initially stated, changes shown here are only some of those available. With such a tool as SWOTOURS, surface warfare community managers should be able to improve their current decision making process by having more information available.

VI. CONCLUSIONS AND RECOMMENDATIONS

Information gained from manpower models are just a part of the total information required by the manpower manager to conduct his tasks in the best manner. The versatility of the model and the amount of information which is available from SWOTOURS were demonstrated in previous chapters. Shortages currently present in mid-grade SWOs may eventually lessen, or even disappear with new personnel management changes. However, unless the current shortage of mid-level officers is solved using lateral entry personnel (an unlikely eventuality), the manpower manager must continue to monitor closely the current stock of officers as they pass through the system. It is doubtful that a glut of SWOs will occur in the near future, but even an oversupply may become a manpower management problem, albeit probably more welcome.

Whatever the numbers situation in officer inventories, the ideal situation is to manage manpower resources in such a way that personal skills and job requirements mesh at the proper point in the career path. The SWOTOURS model hopefully has reached a stage of development where it will be of great usefulness to various officer managers. The continual interchange of information between user and modeler is required to work out the lack of trust syndrome usually found between groups who don't understand the assumptions and requirements of the other.

As shown in Chapter V, SWOTOURS can provide information in many areas. As the Model becomes well used, there may develop some new areas in which the model can be expanded. The following two recommendations require more research. It is felt, however, that their development and implementation would be very beneficial to the Navy manpower system:

1. The integration of shore duty assignments to provide a more complete surface warfare officer picture. As a first step it would be useful to include shore tours of courses and schools required prior to sea duty jobs (e.g. prospective executive officer course).
2. Develop a model similar to SWOTOURS that would consider similar problems in the enlisted community. Work with certain enlisted community managers might lead to adapting the SWOTOURS model to deal with similar aspects of enlisted management.

Manpower management techniques will continue to improve as long as research into manpower management methodology continues. Computer models, especially interactive ones, will provide mathematical and statistical power to the manager in near real time. This power must continue to be explored.

APPENDIX A

TOUR POSITION DESCRIPTIONS

1. DIVISION OFFICER (A1) - The initial sea tour of most surface warfare officer designated trainees will be as division officer for a portion of the 24 month period allowed him to qualify as a SWO. This assignment will be in Engineering, Weapons or Operations Department.

2. EXTENDED DIVISION OFFICER (A2) - Sometimes the initial period of 24 months is not sufficient to allow the individual officer to qualify as a SWO (e.g. the ship operation schedule is not condusive to permit qualifications). In these cases the officer may be extended for up to an additional year to allow qualification. This extension may or may not be in the same division and/or department as the original assignment.

3. SUB-DEPARTMENT HEAD (B) - There are a limited number of junior officer billets at sea that demand a fully qualified surface warfare officer who has demonstrated early his ability to perform at increased levels of responsibility. Thus some junior officers will complete this two year tour following the initial two year division officer tour.

4. DEPARTMENT HEAD (D1) - After completing the SWO Department Head Course, the officer will be assigned as either the

chief engineer, weapons officer or operations officer on a destroyer or frigate class ship. Under the split tour concept an officer will most likely serve 18 months in this billet.

5. EXTENDED DEPARTMENT HEAD (D2) - Due to the desireability for continuity in the department head office, from a ship's precommissioning to her actual active duty, officers reporting to precommissioning department head positions will most likely serve at least 24 months and not serve in a second department head tour. There are also certain officers who will be extended due to personnel preference or the needs of the Navy.

6. 2nd DEPARTMENT HEAD (E) - Following the department head tour the officer will be reassigned to another department head tour in either an amphibious, mobile logistic support ship or operational staff. Usually the second half of the split tour will be spent serving as department head in a shipboard area other than the initial department assignment.

7. NON-EXECUTIVE OFFICER (G) - Due to the limited number of lieutenant commander executive officer billets available not every officer can serve in that position. These non-executive officer billets require a greater degree of responsibility of the officer than was required as a department head in his previous tours. Department head on a cruiser or positions on large sea staffs are two common positions in this category.

8. EXECUTIVE OFFICER (H) - Lieutenant commander officer records are reviewed to determine eligibility for an executive officer tour. Assignment as an executive officer afloat will be dependent upon professional background, billet availability, and personal desires. Assignment to this billet will involve attendance of the officer at the prospective executive officer course.

9. LATE EXECUTIVE OFFICER (K) - Commanders are required to fill the billet of executive officer on major ships. Thus some of those officers who did not serve as an executive officer as a lieutenant commander may so serve at the commander rank.

10. POST EXECUTIVE OFFICER (I) - Usually filled by an officer who will spend two at sea tours as a lieutenant commander and has spent his first as an executive officer. This billet is either a tour on an afloat staff or a lieutenant commander command tour on a smaller ship.

11. COMMANDER COMMAND (J) - More than half of the surface commander sea assignments are as commanding officers of ships. Command screening by formal board action is required. Commander command assignments are established as 2-year tours. As with executive officers, those selected first complete the prospective commanding officer course.

12. NON-COMMAND COMMANDER (N) - Due to the limited number of commander commands available some officers are not chosen to commander command billets. There are still key billets that require both command-like expertise in the warfare speciality and required managerial skills.

13. POST COMMANDER COMMAND (L) - A small percentage of officers leaving their commander command tour may expect a subsequent tour at sea on a major group staff or as engineer of a CV. These billets provide an excellent prelude to assignments in the captain grade.

14. CAPTAIN COMMAND (M) - Captain command assignment patterns are generally a result of earlier experience patterns. Surface warfare captains are screened by a formal board for major sea command.

15. SEQUENTIAL COMMAND (O) - Current policy limits officers to one major sea command. Designated second sequential sea commands are the exception and consist of service force and amphibious squadrons, LHAs and a small number of destroyer squadrons.

APPENDIX B

NUMBER OF SHIPS FORECAST

NO.	SHIP	1981	1982	1983	1984	1985
1.	AD	4	2	1	1	0
2.	AD37	6	7	8	8	9
3.	AE26	9	9	9	9	9
4.	AFS	7	7	7	7	7
5.	AGF	1	1	1	1	1
6.	AO(JUMBO)	3	2	1	1	0
7.	AO177	1	2	3	3	4
8.	AOE	4	4	4	4	4
9.	AOR	7	7	7	7	7
10.	AR	4	4	4	4	4
11.	ARS	5	5	5	5	5
12.	ATS	3	3	3	3	3
13.	AVM	1	1	1	1	1
14.	AVT	1	1	1	1	1
15.	CG16	9	9	9	9	9
16.	CG26	9	9	9	9	9
17.	CG47	0	1	2	2	3
18.	CGN9	1	1	1	1	1
19.	CGN25	1	1	1	1	1
20.	CGN35	1	1	1	1	1
21.	CGN36	6	6	6	6	6
22.	CV	9	9	9	9	9
23.	CVN	3	4	4	4	4
24.	DD	8	6	4	0	0
25.	DD931	10	9	6	6	5
26.	DD946	4	4	3	3	3
27.	DD963	30	30	30	30	30
28.	DDG2	27	27	27	27	27
29.	DDG37	10	10	10	10	10
30.	FF1037	2	2	2	2	2
31.	FF1040	10	10	10	10	10
32.	FF1052	47	47	47	47	47
33.	FFG1	6	6	6	6	6
34.	FFG7	12	19	26	30	34
35.	LCC	2	2	2	2	2
36.	LHA	5	5	5	5	5
37.	LPH	7	7	7	7	7
38.	LPD	14	14	14	14	14
39.	LSD28	8	7	6	5	4
40.	LSD36	5	5	6	8	9
41.	LKA	5	5	5	5	5
42.	LST	20	20	20	20	20
43.	MSO	25	21	18	18	15
44.	PHM	3	1	2	3	4
45.	CRUDESGRU	5	5	5	5	5
46.	SERVRON	4	4	4	4	4
47.	PHIBGRU	2	2	2	2	2
48.	DESRON	19	19	19	19	19
49.	PHIBRON	8	8	8	8	8
50.	CARGRU	8	8	8	8	8
51.	READINESS DESRON	7	7	7	7	7
52.	MAJOR CMD	18	19	19	20	21
53.	SEQUENTIAL CMD	8	9	9	9	10
54.	DUMMY I	1	1	1	1	1
55.	DUMMY II	0	0	0	0	0

APPENDIX C

NUMBER OF SURFACE WARFARE SEA BILLETS BY SHIPTYPE

NO.	SHIP	A	B	D	E	G	H	K	I	J	N	L	M	O
1.	AD		1			1		1					1	
2.	AD37	1	1			2		1					1	
3.	AE26	4	1		2		1			1				
4.	AFS	8	1		2			1						
5.	AGF	3	3		2			1						
6.	AO(JUMBO)	8	2		2			1						
7.	AO177	3	1		2		1			1				
8.	AOE	5			2			1						
9.	AOR	5			2			1						
10.	AR		1					1						
11.	ARS	2												
12.	ATS	1												
13.	AVM	5	2		2		1			1				
14.	AVT	10	3			3						1		
15.	CG16	11	3		3			1					1	
16.	CG26	12	3		3			1					1	
17.	CG47	18	6		2	2		1				1	1	
18.	CGN9	14	7			6		1			2		1	
19.	CGN25	7	3			3		1					1	
20.	CGN35	8	3		2	1		1					1	
21.	CGN36	6	3		2	1		1					1	
22.	CV	20	5			3						1		
23.	CVN	17	1			7					1			
24.	DD	6		3			1			1				
25.	DD931	11		3			1			1				
26.	DD946	7		3			1			1				
27.	DD963	10		3			1			1				
28.	DDG2	12		3			1			1				
29.	DDG37	13	2		3		1			1				
30.	FF1037	7		3	1		1							
31.	FF1040	11		3			1			1				
32.	FF1052	10		3			1			1				
33.	FFG1	9		3			1			1				
34.	FFG7	2	2	3			1			1				
35.	LCC	8	1		2	1		1			1			
36.	LHA	8	3		2	1		1			1			
37.	LPH	8	2		2	1								
38.	LPD	7	1		2			1						
39.	LSD28	6	1		2		1			1				
40.	LSD36	6	1		2			1		1				
41.	LKA	9	2		2			1						
42.	LST	5	1		2		1			1				
43.	MSO	2	1			1								
44.	PHM	2			1		1							
45.	CRUDESGRU		1			5						2		
46.	SERVRON		1			2					1			
47.	PHIBGRU		3			4					3	2		
48.	DESRON		1		2				1				1	
49.	PHIBRON		3			3					2	1		
50.	CARGRU		1			1					2			1
51.	READINESS DESRON		1		2							1		1
52.	MAJOR CMD												1	
53.	SEQUENTIAL CMD													1

APPENDIX D

INVENTORY OF SURFACE WARFARE OFFICERS FOR 19XX

INVENTORY OF SURFACE WARFARE OFFICERS FOR 1981

YCS	*ENS*	*LTJG*	*LT*	*LCDR*	*CDR*	*CAPT*
1.	1319					
2.	1446					
3.		1348				
4.		953				
5.		40	915			
6.		4	599			
7.			472			
8.			306			
9.			289			
10.			52	309		
11.			25	236		
12.				244		
13.				298		
14.				229		
15.				261		
16.				61	202	
17.				46	230	
18.				58	277	
19.				68	193	
20.				127	276	
21.				31	56	110
22.					16	113
23.					18	87
24.					35	107
25.					17	118
26.					5	87
27.					1	46
28.						61
29.						57
30.						48
31.						3

INVENTORY OF SURFACE WARFARE OFFICERS FOR 1982

YCS	ENS	LTJG	LT	LCDR	CDR	CAPT
1.	1319					
2.	1446					
3.		1510				
4.		1259				
5.		32	728			
6.		4	678			
7.			456			
8.			385			
9.			278			
10.			39	232		
11.			28	280		
12.				217		
13.				231		
14.				276		
15.				225		
16.				60	199	
17.				50	208	
18.				39	231	
19.				55	271	
20.				64	188	
21.				46	65	128
22.					14	99
23.					7	112
24.					13	83
25.					27	95
26.					7	102
27.					1	72
28.						39
29.						52
30.						53
31.						4

INVENTORY OF SURFACE WARFARE OFFICERS FOR 1983

YCS	*ENS*	*LTJG*	*LT*	*LCDR*	*CDR*	*CAPT*
1.	1319					
2.	1446					
3.		1510				
4.		1410				
5.		42	961			
6.		3	539			
7.			517			
8.			372			
9.			350			
10.			37	223		
11.			21	210		
12.				258		
13.				205		
14.				214		
15.				271		
16.				52	172	
17.				49	205	
18.				43	210	
19.				37	226	
20.				52	264	
21.				23	44	87
22.					17	116
23.					6	98
24.					5	107
25.					10	74
26.					11	82
27.					1	84
28.						60
29.						33
30.						49
31.						4

INVENTORY OF SURFACE WARFARE OFFICERS FOR 1984

YCS	ENS	LTJG	LT	LCDR	CDR	CAPT
1.	1319					
2.	1446					
3.		1510				
4.		1410				
5.		47	1077			
6.		4	712			
7.			411			
8.			422			
9.			338			
10.			47	280		
11.			20	202		
12.				193		
13.				244		
14.				190		
15.				210		
16.				62	207	
17.				43	177	
18.				42	207	
19.				41	205	
20.				35	220	
21.				19	62	123
22.					11	78
23.					7	115
24.					4	93
25.					4	95
26.					4	64
27.					2	68
28.						71
29.						51
30.						31
31.						4

INVENTORY OF SURFACE WARFARE OFFICERS FOR 1985

YCS	ENS	LTJG	LT	LCDR	CDR	CAPT
1.	1319					
2.	1446					
3.		1510				
4.		1410				
5.		47	1077			
6.		4	798			
7.			543			
8.			335			
9.			384			
10.			45	271		
11.			26	253		
12.				186		
13.				183		
14.				226		
15.				186		
16.				48	160	
17.				51	213	
18.				37	178	
19.				40	202	
20.				39	199	
21.				13	52	102
22.					16	111
23.					5	77
24.					5	109
25.					3	82
26.					2	82
27.					1	53
28.						57
29.						61
30.						48
31.						2

APPENDIX E

TOUR POSITION INDICATORS

NO.	*CODE*	*NAME*	*BEGIN*	*LENGTH*
1.	*A1*	*DIV OFF*	0.75	2.00
2.	*A2*	*EXT DIV OFF*	0.75	2.50
3.	*B*	*SUB-DEP HEAD*	2.75	1.50
4.	*D1*	*DEP HEAD*	7.00	1.50
5.	*D2*	*EXT DEP HEAD*	7.00	2.00
6.	*E*	*2ND DEP HEAD*	8.50	1.50
7.	*G*	*NON-XO*	12.50	2.00
8.	*H*	*XO*	12.00	1.50
9.	*K*	*LATE XO*	16.00	1.50
10.	*I*	*POST-XO*	13.50	1.50
11.	*J*	*CDR CO*	18.00	2.00
12.	*N*	*NON-CO*	17.00	2.00
13.	*L*	*POST-CO*	20.00	1.50
14.	*M*	*CAPT CO*	22.50	2.00
15.	*O*	*SEQUENT CO*	24.50	1.50

APPENDIX F

THE TOUR-GRADE MATCH MATRIX

NO.	*CODE*	*TOURNAMES*	*ENS*	*LTJG*	*LT*	*LCDR*	*CDR*	*CAPT*
1.	*A1*	*DIV OFF*	1	1	0	0	0	0
2.	*A2*	*EXT DIV OFF*	1	1	1	0	0	0
3.	*B*	*SUB-DEP HEAD*	0	1	1	0	0	0
4.	*D1*	*DEP HEAD*	0	0	1	0	0	0
5.	*D2*	*EXT DEP HEAD*	0	0	1	1	0	0
6.	*E*	*2ND DEP HEAD*	0	0	1	1	0	0
7.	*G*	*NON-XO*	0	0	0	1	0	0
8.	*H*	*XO*	0	0	0	1	0	0
9.	*K*	*LATE XO*	0	0	0	0	1	0
10.	*I*	*POST-XO*	0	0	0	1	0	0
11.	*J*	*CDR CO*	0	0	0	0	1	0
12.	*N*	*NON-CO*	0	0	0	0	1	0
13.	*L*	*POST-CO*	0	0	0	0	1	1
14.	*M*	*CAPT CO*	0	0	0	0	0	1
15.	*O*	*SEQUENT CO*	0	0	0	0	0	1

APPENDIX G

ORIGINAL DISPLAYS

NUMBER OF SURFACE WARFARE SEA BILLETS

YEAR	A1	A2	B	D1	D2	E	G	H	K	I	J	N	L	M	O
1981	556	2265	417	359	115	359	200	208	94	22	208	54	39	75	23
1982	575	2250	431	357	129	357	205	210	93	22	212	55	40	76	24
1983	596	2201	447	360	129	360	205	212	94	22	214	55	41	77	24
1984	608	2181	456	363	126	363	205	212	96	22	215	55	41	78	24
1985	621	2173	466	366	132	366	205	216	97	22	219	55	42	80	25
1981-85	591	2214	443	361	126	361	204	212	95	22	214	55	41	77	24

MODEL A RESULT OPTIONS:
DONE-0/REQUIREMENTS-1/SUPPLY-2/OPPORTUNITY-3/BILLET RATES-4
TYPE ONE OF THE NUMBERS LISTED ABOVE!

NUMBER OF SURFACE WARFARE OFFICERS

YEAR	A1	A2	B	D1	D2	E	G	H	K	I	J	N	L	M	O
1981	609	2376	527	311	90	426	267	236	327	40	429	123	230	192	104
1982	650	2506	568	364	115	332	257	208	288	36	403	127	249	172	116
1983	678	2490	684	370	120	337	246	177	278	40	444	110	197	182	93
1984	691	2468	723	410	126	402	218	193	249	32	383	104	229	184	78
1985	704	2448	731	348	117	401	208	169	275	30	360	94	217	176	94
1981-85	666	2458	646	361	114	379	239	197	284	35	404	112	225	182	97

MODEL A RESULT OPTIONS:
DONE-0/REQUIREMENTS-1/SUPPLY-2/OPPORTUNITY-3/BILLET RATES-4
TYPE ONE OF THE NUMBERS LISTED ABOVE!

SEATOUR OPPORTUNITY (SHORTFALL) OF ELIGIBLE SURFACE WARFARE OFFICERS

YEAR	A1	A2	B	D1	D2	E	G	H	K	I	J	N	L	M	O
1981	91	95	79	(13)	(22)	84	75	88	29	55	48	44	17	39	22
1982	88	90	76	98	(11)	(7)	80	(1)	32	61	53	43	16	44	21
1983	88	88	65	97	(7)	(6)	83	(16)	34	55	48	50	21	42	26
1984	88	88	63	89	100	90	94	(9)	38	69	56	53	18	42	31
1985	88	89	64	(5)	(11)	91	99	(22)	35	74	61	59	19	45	27
1981-85	89	90	69	100	(10)	95	85	(7)	33	62	53	49	18	43	25

MODEL A RESULT OPTIONS:
DONE-0/REQUIREMENTS-1/SUPPLY-2/OPPORTUNITY-3/BILLET RATES-4
TYPE ONE OF THE NUMBERS LISTED ABOVE!

BILLET RATES (REQUIREMENT DIVIDED BY TOUR LENGTH)

YEAR	A1	A2	B	D1	D2	E	G	H	K	I	J	N	L	M	O
1981	278	906	278	239	58	239	100	139	63	15	104	27	26	38	15
1982	287	900	287	238	65	238	103	140	62	15	106	28	27	38	16
1983	298	880	298	240	65	240	103	141	63	15	107	28	27	39	16
1984	304	872	304	242	63	242	103	141	64	15	108	28	27	39	16
1985	311	869	311	244	66	244	103	144	65	15	110	28	28	40	17
1981-85	296	886	296	241	63	241	102	141	63	15	107	27	27	39	16

APPENDIX H

SWO PROMOTION AND CONTINUATION RATES

Base Grade and YCS	Continuation Rate	Promotion Rate	Projected Grade and YCS
01 ENS	1.00	-----	01 ENS
01 ENS	1.096	-----	02 ENS
02 ENS	1.044	1.00	03 LTJG
03 LTJG	.934	-----	04 LTJG
04 LTJG	.797	.958	05 LT
04 LTJG	.797	.042	05 LTJG
05 LTJG	.091	-----	06 LTJG
05 LT	.741	-----	06 LT
06 LT	.762	-----	07 LT
07 LT	.816	-----	08 LT
08 LT	.909	-----	09 LT
09 LT	.935	.857	10 LCDR
09 LT	.935	.143	10 LT
10 LT	.615	.885	11 LT
10 LT	.615	.115	11 LCDR
10 LCDR	.893	-----	11 LCDR
11 LCDR	.920	-----	12 LCDR
12 LCDR	.947	-----	13 LCDR
13 LCDR	.927	-----	14 LCDR
14 LCDR	.981	-----	15 LCDR
15 LCDR	.994	.768	16 CDR
15 LCDR	.994	.232	16 LCDR
16 LCDR	.949	.869	17 LCDR
16 LCDR	.949	.131	17 CDR
17 LCDR	.958	.896	18 LCDR
17 LCDR	.958	.104	18 CDR
18 LCDR	.945	-----	19 LCDR
19 LCDR	.947	-----	20 LCDR

Base Grade and YCS	Continuation Rate	Promotion Rate	Projected Grade and YCS
20 LCDR	.362	-----	21 LCDR
16 CDR	.991	-----	17 CDR
17 CDR	.984	-----	18 CDR
18 CDR	.978	-----	19 CDR
19 CDR	.973	-----	20 CDR
20 CDR	.700	.666	21 CAPT
20 CDR	.700	.334	21 CDR
21 CDR	.657	.613	22 CAPT
21 CDR	.657	.387	22 CDR
22 CDR	.532	.820	23 CDR
22 CDR	.532	.180	23 CAPT
23 CDR	.696	-----	24 CDR
24 CDR	.767	-----	25 CDR
25 CDR	.417	-----	26 CDR
26 CDR	.200	-----	27 CDR
22 CAPT	.698	-----	22 CAPT
22 CAPT	.979	-----	23 CAPT
23 CAPT	.951	-----	24 CAPT
24 CAPT	.887	-----	25 CAPT
25 CAPT	.863	-----	26 CAPT
26 CAPT	.828	-----	27 CAPT
27 CAPT	.840	-----	28 CAPT
28 CAPT	.854	-----	29 CAPT
29 CAPT	.937	-----	30 CAPT
30 CAPT	.080	-----	31 CAPT

APPENDIX I

SELECTION POINTS IN YCS

NO.	CODE	TOURNAMES	ENS	LTJG	LT	LCDR	CDR	CAPT
1.	A1	DIV OFF	2					
2.	A2	EXT DIV OFF	2					
3.	B	SUB-DEP HEAD		3				
4.	D1	DEP HEAD			5			
5.	D2	EXT DEP HEAD			5			
6.	E	2ND DEP HEAD			5			
7.	G	NON-XO				10		
8.	H	XO				10		
9.	K	LATE XO					16	
10.	I	POST-XO				10		
11.	J	CDR CO					16	
12.	N	NON-CO					16	
13.	L	POST-CO					16	
14.	M	CAPT CO						21
15.	O	SEQUENT CO						21

APPENDIX J

MODEL B OUTPUTS

AVERAGE BILLET RATES (REQUIREMENT DIVIDED BY TOUR LENGTH)

YEAR	A1	A2	B	D1	D2	E	G	H	K	I	J	N	L	M	O
1981-85	296	886	296	241	63	241	102	141	63	15	107	27	27	39	16
1982-86	304	877	304	242	65	242	103	142	64	15	108	28	28	39	16

NUMBER OF SURFACE WARFARE OFFICERS

YEAR	A1	A2	B	D1	D2	E	G	H	K	I	J	N	L	M	O
1981-85	1446	1446	1478	952	952	952	263	263	188	263	188	188	188	110	110
1982-86	1446	1446	1510	984	984	984	263	263	176	263	176	176	176	106	106

SEATOUR OPPORTUNITY (SHORTFALL) OF ELIGIBLE SURFACE WARFARE OFFICERS

YEAR	A1	A2	B	D1	D2	E	G	H	K	I	J	N	L	M	O
1981-85	20	61	20	25	7	25	39	54	34	6	57	15	14	35	15
1982-86	21	61	20	25	7	25	39	54	36	6	61	16	16	37	15

APPENDIX K

TOTAL INVENTORY OF SURFACE WARFARE OFFICERS

YCS	1981	1982	1983	1984	1985
1.	1319	1319	1319	1319	1319
2.	1446	1446	1446	1446	1446
3.	1348	1510	1510	1510	1510
4.	953	1259	1410	1410	1410
5.	955	760	1003	1124	1124
6.	603	682	542	716	802
7.	472	456	517	411	543
8.	306	385	372	422	335
9.	289	278	350	338	384
10.	361	271	260	327	316
11.	261	308	231	222	279
12.	244	217	258	193	186
13.	298	231	205	244	183
14.	229	276	214	190	226
15.	261	225	271	210	186
16.	263	259	224	269	208
17.	276	258	254	220	264
18.	335	270	253	249	215
19.	261	326	263	246	242
20.	403	252	316	255	238
21.	197	239	154	204	167
22.	129	113	133	89	127
23.	105	119	104	122	82
24.	142	96	112	97	114
25.	135	122	84	99	85
26.	92	109	93	68	84
27.	47	73	85	70	54
28.	61	39	60	71	57
29.	57	52	33	51	61
30.	48	53	49	31	48
31.	3	4	4	4	2

APPENDIX L

BEGINNING DISPLAY AND RESULT MATRICES

SELECTION POINTS IN YCS

NO.	*CODETOURNAMES*		*ENS*	*LTJG*	*LT*	*LCDR*	*CDR*	*CAPT*
1.	*A1*	*DIV OFF*	2					
2.	*A2*	*EXT DIV OFF*	2					
3.	*B*	*SUB-DEP HEAD*		3				
4.	*D1*	*DEP HEAD*			5			
5.	*D2*	*EXT DEP HEAD*			5			
6.	*E*	*2ND DEP HEAD*			5			
7.	*G*	*NON-XO*				10		
8.	*H*	*XO*				10		
9.	*K*	*LATE XO*					16	
10.	*I*	*POST-XO*				10		
11.	*J*	*CDR CO*					16	
12.	*N*	*NON-CO*					16	
13.	*L*	*POST-CO*					16	
14.	*M*	*CAPT CO*						21
15.	*O*	*SEQUENT CO*						21

TOTAL INVENTORY OF SURFACE WARFARE OFFICERS

YCS	1981	1982	1983	1984	1985	1986
1.	1319	1319	1319	1319	1319	1319
2.	1446	1446	1446	1446	1446	1446
3.	1348	1510	1510	1510	1510	1510
4.	953	1259	1410	1410	1410	1410
5.	955	760	1003	1124	1124	1124
6.	603	682	542	716	802	802
7.	472	456	517	411	543	608
8.	306	385	372	422	335	443
9.	289	278	350	338	384	305
10.	361	271	260	327	316	359
11.	261	308	231	222	279	270
12.	244	217	258	193	186	233
13.	298	231	205	244	183	176
14.	229	276	214	190	226	170
15.	261	225	271	210	186	222
16.	263	259	224	269	208	185
17.	276	258	254	220	264	205
18.	335	270	253	249	215	259
19.	261	326	263	246	242	209
20.	403	252	316	255	238	235
21.	197	239	154	204	167	153
22.	129	113	133	89	127	105
23.	105	119	104	122	82	117
24.	142	96	112	97	114	76
25.	135	122	84	99	85	101
26.	92	109	93	68	84	72
27.	47	73	85	70	54	68
28.	61	39	60	71	57	45
29.	57	52	33	51	61	49
30.	48	53	49	31	48	57
31.	3	4	4	4	2	4

NUMBER OF SHIPS FORECAST

NO.	SHIP	1981	1982	1983	1984	1985	1986
1.	AD	4	2	1	1	0	0
2.	AD37	6	7	8	8	9	9
3.	AE26	9	9	9	9	9	9
4.	AFS	7	7	7	7	7	7
5.	AGF	1	1	1	1	1	1
6.	AO(JUMBO)	3	2	1	1	0	0
7.	AO177	1	2	3	3	4	4
8.	AOE	4	4	4	4	4	4
9.	AOR	7	7	7	7	7	7
10.	AR	4	4	4	4	4	4
11.	ARS	5	5	5	5	4	4
12.	ATS	3	3	3	3	3	3
13.	AVM	1	1	1	1	1	1
14.	AVT	1	1	1	1	1	1
15.	CG16	9	9	9	9	9	9
16.	CG26	9	9	9	9	9	9
17.	CG47	0	1	2	2	3	4
18.	CGN9	1	1	1	1	1	1
19.	CGN25	1	1	1	1	1	1
20.	CGN35	1	1	1	1	1	1
21.	CGN36	6	6	6	6	6	6
22.	CV	9	9	9	9	9	9
23.	CVN	3	4	4	4	4	4
24.	DD	8	6	4	0	0	0
25.	DD931	10	9	6	6	5	4
26.	DD946	4	4	3	3	3	2
27.	DD963	30	30	30	30	30	30
28.	DDG2	27	27	27	27	27	27
29.	DDG37	10	10	10	10	10	10
30.	FF1037	2	2	2	2	2	2
31.	FF1040	10	10	10	10	10	10
32.	FF1052	47	47	47	47	47	47
33.	FFG1	6	6	6	6	6	6
34.	FFG7	12	19	26	30	34	38
35.	LCC	2	2	2	2	2	2
36.	LHA	5	5	5	5	5	5
37.	LPH	7	7	7	7	7	7
38.	LPD	14	14	14	14	14	14
39.	LSD28	8	7	6	5	4	3
40.	LSD36	5	5	6	8	9	10
41.	LKA	5	5	5	5	5	5
42.	LST	20	20	20	20	20	20
43.	MSO	25	21	18	18	15	15
44.	PHM	3	1	2	3	4	4
45.	CRUDESGRU	5	5	5	5	5	5
46.	SERVRON	4	4	4	4	4	4
47.	PHIBGRU	2	2	2	2	2	2
48.	DESRON	19	19	19	19	19	19
49.	PHIBRON	8	8	8	8	8	8
50.	CARGRU	8	8	8	8	8	8
51.	READINESS DESRON	7	7	7	7	7	7
52.	MAJOR CMD	18	19	19	20	21	22
53.	SEQUENTIAL CMD	8	9	9	9	10	10
54.	DUMMY I	1	1	1	1	1	1
55.	DUMMY II	0	0	0	0	0	0

NUMBER OF SURFACE WARFARE SEA BILLETS BY SHIPTYPE

NO.	SHIP	A	B	D	E	G	H	K	I	J	N	L	M	O
1.	AD		1			1		1					1	
2.	AD37	1	1			2		1					1	
3.	AE26	4	1		2		1			1				
4.	AFS	8	1		2			1						
5.	AGF	3	3		2			1						
6.	AO(JUMBO)	8	2		2			1						
7.	AO177	3	1		2		1			1				
8.	AOE	5			2			1						
9.	AOR	5			2			1						
10.	AR		1					1						
11.	ARS	2												
12.	ATS	1												
13.	AVM	5	2		2		1			1				
14.	AVT	10	3			3						1		
15.	CG16	11	3		3			1					1	
16.	CG26	12	3		3			1					1	
17.	CG47	18	6		2	2		1				1	1	
18.	CGN9	14	7			6		1			2		1	
19.	CGN25	7	3			3		1					1	
20.	CGN35	8	3		2	1		1					1	
21.	CGN36	6	3		2	1		1					1	
22.	CV	20	5			3						1		
23.	CVN	17	1			7					1			
24.	DD	6		3			1			1				
25.	DD931	11		3			1			1				
26.	DD946	7		3			1			1				
27.	DD963	10		3			1			1				
28.	DDG2	12		3			1			1				
29.	DDG37	13	2		3		1			1				
30.	FF1037	7		3	1		1							
31.	FF1040	11		3			1			1				
32.	FF1052	10		3			1			1				
33.	FFG1	9		3			1			1				
34.	FFG7	2	2	3			1			1				
35.	LCC	8	1		2	1		1			1			
36.	LHA	8	3		2	1		1			1			
37.	LPH	8	2		2	1								
38.	LPD	7	1		2			1						
39.	LSD28	6	1		2		1			1				
40.	LSD36	6	1		2			1		1				
41.	LKA	9	2		2			1						
42.	LST	5	1		2		1			1				
43.	MSO	2	1			1								
44.	PHM	2			1		1							
45.	CRUDESGRU		1			5						2		
46.	SERVRON		1			2					1			
47.	PHIBGRU		3			4					3	2		
48.	DESRON		1		2				1				1	
49.	PHIBRON		3			3					2	1		
50.	CARGRU		1			1					2			1
51.	READINESS DESRON		1		2							1		1
52.	MAJOR CMD												1	
53.	SEQUENTIAL CMD													1

INVENTORY OF SURFACE WARFARE OFFICERS FOR 1981

YCS	ENS	LTJG	LT	LCDR	CDR	CAPT
1.	1319					
2.	1446					
3.		1348				
4.		953				
5.		40	915			
6.		4	599			
7.			472			
8.			306			
9.			289			
10.			52	309		
11.			25	236		
12.				244		
13.				298		
14.				229		
15.				261		
16.				61	202	
17.				46	230	
18.				58	277	
19.				68	193	
20.				127	276	
21.				31	56	110
22.					16	113
23.					18	87
24.					35	107
25.					17	118
26.					5	87
27.					1	46
28.						61
29.						57
30.						48
31.						3

INVENTORY OF SURFACE WARFARE OFFICERS FOR 1982

YCS	ENS	LTJG	LT	LCDR	CDR	CAPT
1.	1319					
2.	1446					
3.		1510				
4.		1259				
5.		32	728			
6.		4	678			
7.			456			
8.			385			
9.			278			
10.			39	232		
11.			28	280		
12.				217		
13.				231		
14.				276		
15.				225		
16.				60	199	
17.				50	208.	
18.				39	231	
19.				55	271	
20.				64	188	
21.				46	65	128
22.					14	99
23.					7	112
24.					13	83
25.					27	95
26.					7	102
27.					1	72
28.						39
29.						52
30.						53
31.						4

INVENTORY OF SURFACE WARFARE OFFICERS FOR 1983

YCS	ENS	LTJG	LT	LCDR	CDR	CAPT
1.	1319					
2.	1446					
3.		1510				
4.		1410				
5.		42	961			
6.		3	539			
7.			517			
8.			372			
9.			350			
10.			37	223		
11.			21	210		
12.				258		
13.				205		
14.				214		
15.				271		
16.				52	172	
17.				49	205	
18.				43	210	
19.				37	226	
20.				52	264	
21.				23	44	87
22.					17	116
23.					6	98
24.					5	107
25.					10	74
26.					11	82
27.					1	84
28.						60
29.						33
30.						49
31.						4

INVENTORY OF SURFACE WARFARE OFFICERS FOR 1984

YCS	ENS	LTJG	LT	LCDR	CDR	CAPT
1.	1319					
2.	1446					
3.		1510				
4.		1410				
5.		47	1077			
6.		4	712			
7.			411			
8.			422			
9.			338			
10.			47	280		
11.			20	202		
12.				193		
13.				244		
14.				190		
15.				210		
16.				62	207	
17.				43	177	
18.				42	207	
19.				41	205	
20.				35	220	
21.				19	62	123
22.					11	78
23.					7	115
24.					4	93
25.					4	95
26.					4	64
27.					2	68
28.						71
29.						51
30.						31
31.						4

INVENTORY OF SURFACE WARFARE OFFICERS FOR 1985

YCS	ENS	LTJG	LT	LCDR	CDR	CAPT
1.	1319					
2.	1446					
3.		1510				
4.		1410				
5.		47	1077			
6.		4	798			
7.			543			
8.			335			
9.			384			
10.			45	271		
11.			26	253		
12.				186		
13.				183		
14.				226		
15.				186		
16.				48	160	
17.				51	213	
18.				37	178	
19.				40	202	
20.				39	199	
21.				13	52	102
22.					16	111
23.					5	77
24.					5	109
25.					3	82
26.					2	82
27.					1	53
28.						57
29.						61
30.						48
31.						2

INVENTORY OF SURFACE WARFARE OFFICERS FOR 1986

YCS	*ENS*	*LTJG*	*LT*	*LCDR*	*CDR*	*CAPT*
1.	1319					
2.	1446					
3.		1510				
4.		1410				
5.		47	1077			
6.		4	798			
7.			608			
8.			443			
9.			305			
10.			51	308		
11.			25	245		
12.				233		
13.				176		
14.				170		
15.				222		
16.				43	142	
17.				40	165	
18.				44	215	
19.				35	174	
20.				38	197	
21.				14	47	92
22.					13	92
23.					7	110
24.					3	73
25.					4	97
26.					1	71
27.						68
28.						45
29.						49
30.						57
31.						4

TOUR POSITION INDICATORS

NO.	CODE	NAME	BEGIN	LENGTH
1.	A1	DIV OFF	0.75	2.00
2.	A2	EXT DIV OFF	0.75	2.50
3.	B	SUB-DEP HEAD	2.75	1.50
4.	D1	DEP HEAD	7.00	1.50
5.	D2	EXT DEP HEAD	7.00	2.00
6.	E	2ND DEP HEAD	8.50	1.50
7.	G	NON-XO	12.50	2.00
8.	H	XO	12.00	1.50
9.	K	LATE XO	16.00	1.50
10.	I	POST-XO	13.50	1.50
11.	J	CDR CO	18.00	2.00
12.	N	NON-CO	17.00	2.00
13.	L	POST-CO	20.00	1.50
14.	M	CAPT CO	22.50	2.00
15.	O	SEQUENT CO	24.50	1.50

AVERAGE BILLET RATES (REQUIREMENT DIVIDED BY TOUR LENGTH)

YEAR	A1	A2	B	D1	D2	E	G	H	K	I	J	N	L	M	O
1981-85	290	888	290	237	63	237	100	141	63	13	107	27	27	38	16
1982-86	298	880	298	238	65	238	100	142	64	13	108	28	28	39	16

NUMBER OF SURFACE WARFARE OFFICERS

YEAR	A1	A2	B	D1	D2	E	G	H	K	I	J	N	L	M	O
1981-85	1446	1446	1478	952	952	952	263	263	188	263	188	188	188	110	110
1982-86	1446	1446	1510	984	984	984	263	263	176	263	176	176	176	106	106

SEATOUR OPPORTUNITY (SHORTFALL) OF ELIGIBLE SURFACE WARFARE OFFICERS

YEAR	A1	A2	B	D1	D2	E	G	H	K	I	J	N	L	M	O
1981-85	20	61	20	25	7	25	38	54	34	5	57	15	14	35	15
1982-86	21	61	20	24	7	24	38	54	36	5	61	16	16	36	15

APPENDIX M

MODEL ALTERATIONS

CHANGE I

(BILLETS ON SHIPS)

```
      6 SWOTOURS 81

DO YOU WISH TO SEE DETAILED INSTRUCTIONS?  ANSWER YES OR N (NO):
N

-----------------------------------------------------------------

THE FOLLOWING TWO MODELS MAY BE SELECTED BY TYPING THE APPROPRIATE NUMBER:

DONE WITH BOTH MODELS:      TYPE 0
TO SELECT MODEL A:          TYPE 1
TO SELECT MODEL B:          TYPE 2

□:
      2

THE FOLLOWING OPTIONS ARE AVAILABLE:

0. DONE WITH THIS MODEL: TYPE 0
1. DISPLAY SOME DATA:    TYPE 1
2. CHANGE SOME DATA:     TYPE 2
3. DISPLAY RESULTS:      TYPE 3

□:
      2

THE FOLLOWING CHANGES MAY BE MADE IN THE DATA:

0. DONE WITH ALL CHANGES:                                        TYPE 0
1. CHANGE NUMBERS OF SHIPS BY TYPE:                              TYPE 1
2. CHANGE THE BEGINNING YEAR AND/OR LENGTH OF ANY TOUR:          TYPE 2
3. CHANGE NUMBER OF BILLETS BY SHIP TYPE:                        TYPE 3
4. CHANGE SELECTION POINTS IN YCS FOR EACH TOUR AND GRADE:       TYPE 4
5. CHANGE THE INVENTORY OF OFFICERS FOR SOME FISCAL YEAR:        TYPE 5
6. CHANGE NUMBER OF ACCESSIONS                                   TYPE 6
7. CHANGE NUMBERS OF SHIPS BY FISCAL YEAR:                       TYPE 7

□:
      3
TYPE NUMBER OF SHIP WHOSE BILLETS MAY HAVE TO BE CHANGED!
   TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.

□:
      54
                                  CURRENT NUMBERS OF BILLETS

NO.  SHIP                  A   B   D   E   G   H   K   I   J   N   L   M   O

54.  DUMMY I               6   9   6   6   5   0   0   3   0   0   0   1   0

DO YOU WANT TO MAKE ANY CHANGES IN THE ABOVE DATA?  ANSWER YES OR N (NO):
YES

TO GIVE NEW BILLETS TYPE 13 NUMBERS (SEPARATED BY BLANK SPACES)
□:
      6 9 6 6 5 0 0 3 0 0 0 1 0
TYPE NUMBER OF SHIP WHOSE BILLETS MAY HAVE TO BE CHANGED!
   TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.

□:
      0
```

```
DO YOU WANT TO MAKE THESE CHANGES PERMANENT?   ANSWER YES OR N (NO)!
YES

ARE YOU REALLY SURE YOU WANT TO ALTER THE PERMANENT FILE?   ANSWER YES OR N (NO)!
YES

FILE HAS BEEN ALTERED!

CHANGE OPTIONS:
DONE-0/SHIPS-1/TOURS-2/BILLETS-3/SEL PTS-4/INVTRY-5 /ACCESS-6/SHIPS BY FY-7
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
      0

OPTIONS: DONE-0 /DATA-1 /CHANGE-2 /RESULT-3
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
      3

THE FOLLOWING MODEL B RESULTS MAY BE DISPLAYED BY TYPING THE APPROPRIATE NUMBER:

0. DONE WITH DISPLAYING RESULTS                                  TYPE 0
1. BILLET RATES (REQUIREMENTS DIVIDED BY TOUR LENGTHS)           TYPE 1
2. SUPPLY OF ELIGIBLE OFFICERS FOR EACH TOUR AND FY              TYPE 2
3. SEATOUR OPPORTUNITY (SHORTFALL) FOR EACH TOUR AND FY          TYPE 3

□:
      3
   SEATOUR OPPORTUNITY (SHORTFALL) OF ELIGIBLE SURFACE WARFARE OFFICERS

YEAR      A1   A2   B    D1   D2   E   G   H   K   I   J   N   L   M   O
1981-85   20   61   20   25    7   25  39  54  34   6  57  15  14  35  15
1982-86   21   61   20   25    7   25  39  54  36   6  61  16  16  37  15

MODEL B RESULT OPTIONS:
DONE-0/BILLET RATES-1/SUPPLY-2/OPPORTUNITY-3
TYPE ONE OF THE NUMBERS LISTED ABOVE!
```

CHANGE II

(INVENTORY ON SHIPS)

```
      6 SWOTOURS 81

DO YOU WISH TO SEE DETAILED INSTRUCTIONS?  ANSWER YES OR N (NO)
N

THE FOLLOWING TWO MODELS MAY BE SELECTED BY TYPING THE APPROPRIATE NUMBER:

DONE WITH BOTH MODELS:      TYPE 0
TO SELECT MODEL A:          TYPE 1
TO SELECT MODEL B:          TYPE 2

□:
      2

THE FOLLOWING OPTIONS ARE AVAILABLE:

0. DONE WITH THIS MODEL: TYPE 0
1. DISPLAY SOME DATA:    TYPE 1
2. CHANGE SOME DATA:     TYPE 2
3. DISPLAY RESULTS:      TYPE 3

□:
      2

THE FOLLOWING CHANGES MAY BE MADE IN THE DATA:

0. DONE WITH ALL CHANGES:                                          TYPE 0
1. CHANGE NUMBERS OF SHIPS BY TYPE:                                TYPE 1
2. CHANGE THE BEGINNING YEAR AND/OR LENGTH OF ANY TOUR:            TYPE 2
3. CHANGE NUMBER OF BILLETS BY SHIP TYPE:                          TYPE 3
4. CHANGE SELECTION POINTS IN YCS FOR EACH TOUR AND GRADE:         TYPE 4
5. CHANGE THE INVENTORY OF OFFICERS FOR SOME FISCAL YEAR:          TYPE 5
6. CHANGE NUMBER OF ACCESSIONS                                     TYPE 6
7. CHANGE NUMBERS OF SHIPS BY FISCAL YEAR:                         TYPE 7

□:
      1

TYPE NUMBER OF SHIPTYPE FOR WHICH THE NUMBERS MAY HAVE TO BE CHANGED!
   TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.

□:
      1
                        CURRENT NUMBERS

NO.  SHIP                 1981  1982  1983  1984  1985  1986

 1.  AD                     4     2     1     1     0     0

DO YOU WANT TO MAKE ANY CHANGES IN THE ABOVE DATA?   ANSWER YES OR N (NO)!
YES

TO GIVE NEW NUMBERS TYPE 6 NUMBERS (SEPARATED BY BLANK SPACES)!
□:
      5 5 5 5 5 5
```

```
TYPE NUMBER OF SHIPTYPE FOR WHICH THE NUMBERS MAY HAVE TO BE CHANGED!
   TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.

□:
      2
                        CURRENT NUMBERS

NO.  SHIP                1981  1982  1983  1984  1985  1986

 2.  AD37                   6     7     8     8     9     9

DO YOU WANT TO MAKE ANY CHANGES IN THE ABOVE DATA?   ANSWER YES OR N (NO)!
YES

TO GIVE NEW NUMBERS TYPE 6 NUMBERS (SEPARATED BY BLANK SPACES)!
□:
      4 4 6 7 7 7

TYPE NUMBER OF SHIPTYPE FOR WHICH THE NUMBERS MAY HAVE TO BE CHANGED!
   TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.

□:
      3
                        CURRENT NUMBERS

NO.  SHIP                1981  1982  1983  1984  1985  1986

 3.  AE26                   9     9     9     9     9     9

DO YOU WANT TO MAKE ANY CHANGES IN THE ABOVE DATA?   ANSWER YES OR N (NO)!
11 10 9 8 8 8

TYPE NUMBER OF SHIPTYPE FOR WHICH THE NUMBERS MAY HAVE TO BE CHANGED!
   TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.
```

NUMBER OF SHIPS FORECAST

NO.	SHIP	1981	1982	1983	1984	1985	1986
1.	AD	5	5	5	5	5	5
2.	AD37	6	7	8	8	9	9
3.	AE26	11	10	9	8	8	8
4.	AFS	7	7	7	7	7	7
5.	AGF	1	1	1	1	1	1
6.	AO(JUMBO)	3	3	3	2	1	0
7.	AO177	3	5	5	5	5	5
8.	AOE	4	4	4	4	4	4
9.	AOR	7	7	7	7	7	7
10.	AR	4	4	4	4	4	4
11.	ARS	8	8	8	8	8	8
12.	ATS	3	3	3	3	3	3
13.	AVM	1	1	1	1	1	1
14.	AVT	1	1	1	1	1	1
15.	CG16	9	9	9	9	9	9
16.	CG26	9	9	9	9	9	9
17.	CG47	0	1	2	3	5	7
18.	CGN9	1	1	1	1	1	1
19.	CGN25	1	1	1	1	1	1
20.	CGN35	1	1	1	1	1	1
21.	CGN36	6	6	6	6	6	6
22.	CV	10	10	10	10	10	11
23.	CVN	3	4	4	4	4	5
24.	DD	8	8	8	8	8	8
25.	DD931	13	13	13	9	9	9
26.	DD946	4	4	4	4	4	4
27.	DD963	30	30	30	30	30	30
28.	DDG2	27	27	27	27	27	27
29.	DDG37	14	14	14	14	14	14
30.	FF1037	2	2	2	2	2	2
31.	FF1040	10	10	10	10	10	10
32.	FF1052	47	47	47	47	47	47
33.	FFG1	6	6	6	6	6	6
34.	FFG7	14	19	26	34	41	45
35.	LCC	2	2	2	2	2	2
36.	LHA	5	5	5	5	5	5
37.	LPH	7	7	7	7	7	7
38.	LPD	14	14	14	14	14	14
39.	LSD28	8	7	6	5	4	3
40.	LSD36	5	5	6	8	9	10
41.	LKA	2	2	2	2	2	2
42.	LST	20	20	20	20	20	20
43.	MSO	25	21	18	18	19	19
44.	PHM	1	6	6	6	6	6
45.	CRUDESGRU	5	5	5	5	5	5
46.	SERVRON	4	4	4	4	4	4
47.	PHIBGRU	2	2	2	2	2	2
48.	DESRON	19	19	19	19	19	19
49.	PHIBRON	8	8	8	8	8	8
50.	CARGRU	8	8	8	8	8	8
51.	READINESS DESRON	7	7	7	7	7	7
52.	MAJOR CMD	18	19	19	20	21	22
53.	SEQUENTIAL CMD	8	9	9	9	10	10
54.	DUMMY I	0	1	2	2	2	2
55.	DUMMY II	0	0	0	0	0	0

THE FOLLOWING MODEL B RESULTS MAY BE DISPLAYED BY TYPING THE APPROPRIATE NUMBER:

0. *DONE WITH DISPLAYING RESULTS* *TYPE* 0
1. *BILLET RATES (REQUIREMENTS DIVIDED BY TOUR LENGTHS)* *TYPE* 1
2. *SUPPLY OF ELIGIBLE OFFICERS FOR EACH TOUR AND FY* *TYPE* 2
3. *SEATOUR OPPORTUNITY (SHORTFALL) FOR EACH TOUR AND FY* *TYPE* 3

□:
3
SEATOUR OPPORTUNITY (SHORTFALL) OF ELIGIBLE SURFACE WARFARE OFFICERS

YEAR	*A1*	*A2*	*B*	*D1*	*D2*	*E*	*G*	*H*	*K*	*I*	*J*	*N*	*L*	*M*	*O*
1981-85	22	65	21	27	8	27	41	59	34	6	62	15	15	37	15
1982-86	23	65	22	26	8	26	42	60	38	6	67	16	17	40	15

MODEL B RESULT OPTIONS:
DONE-0/BILLET RATES-1/SUPPLY-2/OPPORTUNITY-3
TYPE ONE OF THE NUMBERS LISTED ABOVE!

CHANGE III

(ACCESSION CHANGES)

```
      6 SWOTOURS 81

DO YOU WISH TO SEE DETAILED INSTRUCTIONS?  ANSWER YES OR N (NO)
N

THE FOLLOWING TWO MODELS MAY BE SELECTED BY TYPING THE APPROPRIATE NUMBER:

DONE WITH BOTH MODELS:      TYPE 0
TO SELECT MODEL A:          TYPE 1
TO SELECT MODEL B:          TYPE 2

□:
      2

THE FOLLOWING OPTIONS ARE AVAILABLE:

0. DONE WITH THIS MODEL: TYPE 0
1. DISPLAY SOME DATA:    TYPE 1
2. CHANGE SOME DATA:     TYPE 2
3. DISPLAY RESULTS:      TYPE 3

□:
      2

THE FOLLOWING CHANGES MAY BE MADE IN THE DATA:

0. DONE WITH ALL CHANGES:                                        TYPE 0
1. CHANGE NUMBERS OF SHIPS BY TYPE:                              TYPE 1
2. CHANGE THE BEGINNING YEAR AND/OR LENGTH OF ANY TOUR:          TYPE 2
3. CHANGE NUMBER OF BILLETS BY SHIP TYPE:                        TYPE 3
4. CHANGE SELECTION POINTS IN YCS FOR EACH TOUR AND GRADE:       TYPE 4
5. CHANGE THE INVENTORY OF OFFICERS FOR SOME FISCAL YEAR:        TYPE 5
6. CHANGE NUMBER OF ACCESSIONS                                   TYPE 6
7. CHANGE NUMBERS OF SHIPS BY FISCAL YEAR:                       TYPE 7

□:
      6

              CURRENT ACCESSIONS

FISCAL YEAR   1981  1982  1983  1984  1985  1986
ACCESSIONS    1319  1319  1319  1319  1319  1319

TO GIVE NEW ACCESSIONS TYPE 6 NUMBERS:
PRESS 'RETURN' IF YOU WANT ALL THE ABOVE NUMBERS RETAINED!
1319 1400 1400 1400 1400 1400
```

NEW ACCESSIONS

FISCAL YEAR	1981	1982	1983	1984	1985	1986
ACCESSIONS	1319	1400	1400	1400	1400	1400

CHANGE OPTIONS:
DONE-0/SHIPS-1/TOURS-2/BILLETS-3/SEL PTS-4/INVTRY-5 /ACCESS-6/SHIPS BY FY-7
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
0

OPTIONS: DONE-0 /DATA-1 /CHANGE-2 /RESULT-3
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
3

THE FOLLOWING MODEL B RESULTS MAY BE DISPLAYED BY TYPING THE APPROPRIATE NUMBER:

0. *DONE WITH DISPLAYING RESULTS* *TYPE 0*
1. *AVERAGE BILLET RATES FOR EACH TOUR* *TYPE 1*
2. *AVERAGE SUPPLY OF ELIGIBLE OFFICERS FOR EACH TOUR* *TYPE 2*
3. *AVERAGE SEATOUR OPPORTUNITY (SHORTFALL) FOR EACH TOUR* *TYPE 3*

□:
3

AVERAGE SEATOUR OPPORTUNITY (SHORTFALL) IN PERCENTAGE

YEAR	*A1*	*A2*	*B*	*D1*	*D2*	*E*	*G*	*H*	*K*	*I*	*J*	*N*	*L*	*M*	*O*
1981-85	21	63	20	26	7	26	41	59	37	6	66	16	16	38	15
1982-86	22	62	21	24	7	24	42	60	39	6	70	16	17	43	16

MODEL B RESULT OPTIONS:
DONE-0/AVRG BILL RATES-1/AVRG SUPPLY-2/AVRG OPPORTUNITY-3/
TYPE ONE OF THE NUMBERS LISTED ABOVE!

CHANGE IV

(LATERAL ENTRY)

```
 6 SWOTOURS 81

 DO YOU WISH TO SEE DETAILED INSTRUCTIONS?  ANSWER YES OR N (NO):
 N

THE FOLLOWING TWO MODELS MAY BE SELECTED BY TYPING THE APPROPRIATE NUMBER:

DONE WITH BOTH MODELS:      TYPE 0
TO SELECT MODEL A:          TYPE 1
TO SELECT MODEL B:          TYPE 2

□:
      2

THE FOLLOWING OPTIONS ARE AVAILABLE:

0. DONE WITH THIS MODEL: TYPE 0
1. DISPLAY SOME DATA:    TYPE 1
2. CHANGE SOME DATA:     TYPE 2
3. DISPLAY RESULTS:      TYPE 3

□:
      2
THE FOLLOWING CHANGES MAY BE MADE IN THE DATA:

0. DONE WITH ALL CHANGES:                                          TYPE 0
1. CHANGE NUMBERS OF SHIPS BY TYPE:                                TYPE 1
2. CHANGE THE BEGINNING YEAR AND/OR LENGTH OF ANY TOUR:            TYPE 2
3. CHANGE NUMBER OF BILLETS BY SHIP TYPE:                          TYPE 3
4. CHANGE SELECTION POINTS IN YCS FOR EACH TOUR AND GRADE:         TYPE 4
5. CHANGE THE INVENTORY OF OFFICERS FOR SOME FISCAL YEAR:          TYPE 5
6. CHANGE NUMBER OF ACCESSIONS                                     TYPE 6
7. CHANGE NUMBERS OF SHIPS BY FISCAL YEAR:                         TYPE 7

□:
      5

TYPE YEAR FOR WHICH INVENTORY OF OFFICERS MAY HAVE TO BE CHANGED.
□:
      82

DO YOU WANT THE INVENTORY MATRIX DISPLAYED?   ANSWER YES OR N (NO):
YES
```

INVENTORY OF OFFICERS FOR 1982

YCS	ENS	LTJG	LT	LCDR	CDR	CAPT
1.	1319					
2.	1446					
3.		1510				
4.		1259				
5.		32	728			
6.		4	678			
7.			456			
8.			385			
9.			278			
10.			39	232		
11.			28	280		
12.				217		
13.				231		
14.				276		
15.				225		
16.				60	199	
17.				50	208	
18.				39	231	
19.				55	271	
20.				64	188	
21.				46	65	128
22.					14	99
23.					7	112
24.					13	83
25.					27	95
26.					7	102
27.					1	72
28.						39
29.						52
30.						53
31.						4

DO YOU WANT TO CHANGE THE ABOVE INVENTORY MATRIX? ANSWER YES OR N (NO)!
YES
YOU WILL BE ASKED TO GIVE INPUTS BY GRADES
BUT ONLY FOR YEARS OF SERVICE (YCS) FOR WHICH THE NUMBERS ARE NOT ZERO.

TYPE THE NUMBERS OF OFFICERS FOR THE FOLLOWING GRADE AND YCS:
GRADE: ENS YCS: 1 2
PRESS 'RETURN' TO HAVE ALL ENTRIES UNCHANGED FOR THIS GRADE.

TYPE THE NUMBERS OF OFFICERS FOR THE FOLLOWING GRADE AND YCS:
GRADE: LTJG YCS: 3 4 5 6
PRESS 'RETURN' TO HAVE ALL ENTRIES UNCHANGED FOR THIS GRADE.

TYPE THE NUMBERS OF OFFICERS FOR THE FOLLOWING GRADE AND YCS:
GRADE: LT YCS: 5 6 7 8 9 10 11
PRESS 'RETURN' TO HAVE ALL ENTRIES UNCHANGED FOR THIS GRADE.
746 710 486 415 293 39 28

TYPE THE NUMBERS OF OFFICERS FOR THE FOLLOWING GRADE AND YCS:
GRADE: LCDR YCS: 10 11 12 13 14 15 16 17 18 19 20 21
PRESS 'RETURN' TO HAVE ALL ENTRIES UNCHANGED FOR THIS GRADE.
232 295 237 251 296 225 60 50 39 55 64 46

```
TYPE THE NUMBERS OF OFFICERS FOR THE FOLLOWING GRADE AND YCS:
GRADE: CDR                    YCS: 16 17 18 19 20 21 22 23 24 25 26 27
PRESS 'RETURN' TO HAVE ALL ENTRIES UNCHANGED FOR THIS GRADE.


TYPE THE NUMBERS OF OFFICERS FOR THE FOLLOWING GRADE AND YCS:
GRADE: CAPT                   YCS: 21 22 23 24 25 26 27 28 29 30 31
PRESS 'RETURN' TO HAVE ALL ENTRIES UNCHANGED FOR THIS GRADE.

NOTE:    SUBSEQUENT YEAR INVENTORIES HAVE ALSO BEEN CHANGED!

DO YOU WANT INVENTORY OF OFFICERS DISPLAYED OR CHANGED FOR ANOTHER YEAR?
ANSWER YES OR N (NO)!

N

CHANGES MADE WILL BE LOST AFTER EXIT FROM THE MODEL.

CHANGE OPTIONS:
DONE-0/SHIPS-1/TOURS-2/BILLETS-3/SEL PTS-4/INVTRY-5 /ACCESS-6/SHIPS BY FY-7
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
      0

OPTIONS: DONE-0 /DATA-1 /CHANGE-2 /RESULT-3
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
      3

THE FOLLOWING MODEL B RESULTS MAY BE DISPLAYED BY TYPING THE APPROPRIATE NUMBER:

 0. DONE WITH DISPLAYING RESULTS                          TYPE 0
 1. BILLET RATES (REQUIREMENTS DIVIDED BY TOUR LENGTHS)   TYPE 1
 2. SUPPLY OF ELIGIBLE OFFICERS FOR EACH TOUR AND FY      TYPE 2
 3. SEATOUR OPPORTUNITY (SHORTFALL) FOR EACH TOUR AND FY  TYPE 3


□:
      3
   SEATOUR OPPORTUNITY (SHORTFALL) OF ELIGIBLE SURFACE WARFARE OFFICERS

YEAR      A1   A2   B    D1   D2   E    G    H    K    I    J    N    L    M    O
1981-85   22   65   21   26    8   26   39   57   33    6   60   14   15   37   15
1982-86   23   65   22   26    8   26   40   57   36    6   64   15   16   40   15

MODEL B RESULT OPTIONS:
DONE-0/BILLET RATES-1/SUPPLY-2/OPPORTUNITY-3
TYPE ONE OF THE NUMBERS LISTED ABOVE!
```

CHANGE V

(SELECTION POINT)

```
      6 SWOTOURS 81

DO YOU WISH TO SEE DETAILED INSTRUCTIONS?  ANSWER YES OR N (NO)
N

THE FOLLOWING TWO MODELS MAY BE SELECTED BY TYPING THE APPROPRIATE NUMBER:

DONE WITH BOTH MODELS:      TYPE 0
TO SELECT MODEL A:          TYPE 1
TO SELECT MODEL B:          TYPE 2

□:     2

THE FOLLOWING OPTIONS ARE AVAILABLE:

0. DONE WITH THIS MODEL: TYPE 0
1. DISPLAY SOME DATA:    TYPE 1
2. CHANGE SOME DATA:     TYPE 2
3. DISPLAY RESULTS:      TYPE 3

□:
      2

THE FOLLOWING CHANGES MAY BE MADE IN THE DATA:

0. DONE WITH ALL CHANGES:                                        TYPE 0
1. CHANGE NUMBERS OF SHIPS BY TYPE:                              TYPE 1
2. CHANGE THE BEGINNING YEAR AND/OR LENGTH OF ANY TOUR:          TYPE 2
3. CHANGE NUMBER OF BILLETS BY SHIP TYPE:                        TYPE 3
4. CHANGE SELECTION POINTS IN YCS FOR EACH TOUR AND GRADE:       TYPE 4
5. CHANGE THE INVENTORY OF OFFICERS FOR SOME FISCAL YEAR:        TYPE 5
6. CHANGE NUMBER OF ACCESSIONS                                   TYPE 6
7. CHANGE NUMBERS OF SHIPS BY FISCAL YEAR:                       TYPE 7

□:
      4

DO YOU WANT THE SELECTION POINTS DISPLAYED?   ANSWER YES OR N (NO)!
YES
```

SELECTION POINTS IN YCS

NO.	CODE	TOURNAMES	ENS	LTJG	LT	LCDR	CDR	CAPT
1.	A1	DIV OFF	2					
2.	A2	EXT DIV OFF	2					
3.	B	SUB-DEP HEAD		3				
4.	D1	DEP HEAD			5			
5.	D2	EXT DEP HEAD			5			
6.	E	2ND DEP HEAD			5			
7.	G	NON-XO				10		
8.	H	XO				10		
9.	K	LATE XO					16	
10.	I	POST-XO				10		
11.	J	CDR CO					16	
12.	N	NON-CO					16	
13.	L	POST-CO					16	
14.	M	CAPT CO						21
15.	O	SEQUENT CO						21

TYPE NUMBER OF TOUR FOR WHICH THE SELECTION POINT MAY HAVE TO BE CHANGED!
TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.
□:
13

CURRENT SELECTION POINTS

NO.	CODE	TOURNAME	ENS	LTJG	LT	LCDR	CDR	CAPT
13.	L	POST-CO	0	0	0	0	16	0

DO YOU WANT TO CHANGE THE ABOVE SELECTION POINTS??· ANSWER YES OR N (NO)!
YES
TO GIVE NEW SELECTION POINTS TYPE 6 NUMBERS (SEPARATED BY BLANK SPACES):
ONLY ONE NUMBER CAN BE NOT ZERO !
□:
0 0 0 0 18 0

TYPE NUMBER OF TOUR FOR WHICH THE SELECTION POINT MAY HAVE TO BE CHANGED!
TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.
□:
15

CURRENT SELECTION POINTS

NO.	CODE	TOURNAME	ENS	LTJG	LT	LCDR	CDR	CAPT
15.	O	SEQUENT CO	0	0	0	0	0	21

DO YOU WANT TO CHANGE THE ABOVE SELECTION POINTS?? ANSWER YES OR N (NO)!
YES
TO GIVE NEW SELECTION POINTS TYPE 6 NUMBERS (SEPARATED BY BLANK SPACES):
ONLY ONE NUMBER CAN BE NOT ZERO !
□:
0 0 0 0 0 23

TYPE NUMBER OF TOUR FOR WHICH THE SELECTION POINT MAY HAVE TO BE CHANGED!
TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.
□:
0

DO YOU WANT THE SELECTION POINTS DISPLAYED AGAIN? ANSWER YES OR N (NO)!
YES

SELECTION POINTS IN YCS

NO.	CODETOURNAMES		ENS	LTJG	LT	LCDR	CDR	CAPT
1.	A1	DIV OFF	2					
2.	A2	EXT DIV OFF	2					
3.	B	SUB-DEP HEAD		3				
4.	D1	DEP HEAD			5			
5.	D2	EXT DEP HEAD			5			
6.	E	2ND DEP HEAD			5			
7.	G	NON-XO				10		
8.	H	XO				10		
9.	K	LATE XO					16	
10.	I	POST-XO				10		
11.	J	CDR CO					16	
12.	N	NON-CO					16	
13.	L	POST-CO					18	
14.	M	CAPT CO						21
15.	O	SEQUENT CO						23

DO YOU WANT TO MAKE THESE CHANGES PERMANENT? ANSWER YES OR N (NO)!
N

NO ALTERATION HAS BEEN MADE IN THE FILE.

CHANGE OPTIONS:
DONE-0/SHIPS-1/TOURS-2/BILLETS-3/SEL PTS-4/INVTRY-5 /ACCESS-6/SHIPS BY FY-7
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
0

OPTIONS: DONE-0 /DATA-1 /CHANGE-2 /RESULT-3
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
3

THE FOLLOWING MODEL B RESULTS MAY BE DISPLAYED BY TYPING THE APPROPRIATE NUMBER:

0. DONE WITH DISPLAYING RESULTS — TYPE 0
1. AVERAGE BILLET RATES FOR EACH TOUR — TYPE 1
2. AVERAGE SUPPLY OF ELIGIBLE OFFICERS FOR EACH TOUR — TYPE 2
3. AVERAGE SEATOUR OPPORTUNITY (SHORTFALL) FOR EACH TOUR — TYPE 3

□:
3

AVERAGE SEATOUR OPPORTUNITY (SHORTFALL) IN PERCENTAGE

YEAR	A1	A2	B	D1	D2	E	G	H	K	I	J	N	L	M	O
1981-85	22	65	21	27	8	27	41	59	34	6	62	15	13	37	16
1982-86	23	65	22	26	8	26	42	60	38	6	67	16	14	40	16

MODEL B RESULT OPTIONS:
DONE-0/AVRG BILL RATES-1/AVRG SUPPLY-2/AVRG OPPORTUNITY-3/
TYPE ONE OF THE NUMBERS LISTED ABOVE!

CHANGE VI

(TOUR POSITION)

```
    6 SWOTOURS 81

DO YOU WISH TO SEE DETAILED INSTRUCTIONS?  ANSWER YES OR N (NO)!
N
THE FOLLOWING TWO MODELS MAY BE SELECTED BY TYPING THE APPROPRIATE NUMBER:

DONE WITH BOTH MODELS:      TYPE 0
TO SELECT MODEL A:          TYPE 1
TO SELECT MODEL B:          TYPE 2

□:
      2

THE FOLLOWING OPTIONS ARE AVAILABLE:

0. DONE WITH THIS MODEL: TYPE 0
1. DISPLAY SOME DATA:    TYPE 1
2. CHANGE SOME DATA:     TYPE 2
3. DISPLAY RESULTS:      TYPE 3

□:
      2

THE FOLLOWING CHANGES MAY BE MADE IN THE DATA:

0. DONE WITH ALL CHANGES:                                          TYPE 0
1. CHANGE NUMBERS OF SHIPS BY TYPE:                                TYPE 1
2. CHANGE THE BEGINNING YEAR AND/OR LENGTH OF ANY TOUR:            TYPE 2
3. CHANGE NUMBER OF BILLETS BY SHIP TYPE:                          TYPE 3
4. CHANGE SELECTION POINTS IN YCS FOR EACH TOUR AND GRADE:         TYPE 4
5. CHANGE THE INVENTORY OF OFFICERS FOR SOME FISCAL YEAR:          TYPE 5
6. CHANGE NUMBER OF ACCESSIONS                                     TYPE 6
7. CHANGE NUMBERS OF SHIPS BY FISCAL YEAR:                         TYPE 7

□:
      2

DO YOU WISH TO HAVE THE TOUR MATRIX DISPLAYED?   ANSWER YES OR N (NO)!
YES
       TOUR POSITION INDICATORS

NO.  CODE NAME             BEGIN  LENGTH

 1.  A1   DIV OFF          0.75   2.00
 2.  A2   EXT DIV OFF      0.75   2.50
 3.  B    SUB-DEP HEAD     2.75   1.50
 4.  D1   DEP HEAD         7.00   1.50
 5.  D2   EXT DEP HEAD     7.00   2.00
 6.  E    2ND DEP HEAD     8.50   1.50
 7.  G    NON-XO          12.50   2.00
 8.  H    XO              12.00   1.50
 9.  K    LATE XO         16.00   1.50
10.  I    POST-XO         13.50   1.50
11.  J    CDR CO          18.00   2.00
12.  N    NON-CO          17.00   2.00
13.  L    POST-CO         20.00   1.50
14.  M    CAPT CO         22.50   2.00
15.  O    SEQUENT CO      24.50   1.50
```

TYPE NUMBER OF TOUR WHOSE BEGIN YEAR AND LENGTH MAY HAVE TO BE CHANGED!
TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.

□:
11

TOUR POSITION INDICATORS

NO.	CODE	NAME	BEGIN	LENGTH
11.	J	CDR CO	18.00	2.00

DO YOU WANT TO CHANGE THE ABOVE? ANSWER YES OR N (NO)!
YES
TYPE TWO NUMBERS (SEPARATED BY BLANK SPACE) FOR BEGIN YEAR AND LENGTH OF ABOVE TOUR
□:
18.00 2.50

TYPE NUMBER OF TOUR WHOSE BEGIN YEAR AND LENGTH MAY HAVE TO BE CHANGED!
TYPING 0 MEANS NO MORE CHANGES ARE NEEDED.

□:
0

DO YOU WANT THE TOUR MATRIX DISPLAYED AGAIN? ANSWER YES OR N (NO)!
N

DO YOU WANT TO MAKE THESE CHANGES PERMANENT? ANSWER YES OR N (NO)!
N

NO ALTERATION HAS BEEN MADE IN THE FILE.

CHANGE OPTIONS:
DONE-0/SHIPS-1/TOURS-2/BILLETS-3/SEL PTS-4/INVTRY-5 /ACCESS-6/SHIPS BY FY-7
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
0

OPTIONS: DONE-0 /DATA-1 /CHANGE-2 /RESULT-3
TYPE ONE OF THE NUMBERS LISTED ABOVE!
□:
3

THE FOLLOWING MODEL B RESULTS MAY BE DISPLAYED BY TYPING THE APPROPRIATE NUMBER:

0. DONE WITH DISPLAYING RESULTS	TYPE 0
1. AVERAGE BILLET RATES FOR EACH TOUR	TYPE 1
2. AVERAGE SUPPLY OF ELIGIBLE OFFICERS FOR EACH TOUR	TYPE 2
3. AVERAGE SEATOUR OPPORTUNITY (SHORTFALL) FOR EACH TOUR	TYPE 3

□:
3

AVERAGE SEATOUR OPPORTUNITY (SHORTFALL) IN PERCENTAGE

YEAR	A1	A2	B	D1	D2	E	G	H	K	I	J	N	L	M	O
1981-85	22	65	21	27	8	27	41	59	34	6	49	15	15	37	15
1982-86	23	65	22	26	8	26	42	60	38	6	54	16	17	40	15

MODEL B RESULT OPTIONS:
DONE-0/AVRG BILL RATES-1/AVRG SUPPLY-2/AVRG OPPORTUNITY-3/
TYPE ONE OF THE NUMBERS LISTED ABOVE!

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